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ENCYCLOPÆDIA AMERICANA.

STEUBEN, Frederic William Augustus, baron von; a distinguished Prussian officer, who attached himself to the American cause in the revolution of 1776. He had been aid-de-camp to Frederic the Great, and had attained the rank of lieutenant-general in his army. Sacrificing his honors and emoluments in Europe, Steuben came to America in 1777, and tendered his services to congress, as a volunteer in their army, without claiming any rank or compensation. He received the thanks of that body, and joined the main army under the commander-in-chief at Valley Forge. Baron Steuben soon rendered himself particularly useful to the Americans, by disciplining the forces. On the recommendation of general Washington, congress, in May, 1778, appointed the baron inspector-general of the army, with the rank of major-general. His efforts in this capacity were continued with remarkable diligence, until he had placed the troops in a situation to withstand the enemy. In the estimates of the war office, 5000 extra muskets were generally allowed for waste and destruction in the army; but such was the exact order under the superintendence of Steuben, that in his inspection return, but three muskets were deficient, and those accounted for. A complete scheme of exercise and discipline, which he composed, was adopted in the army by the direction of congress. He possessed the right of command in the line, and at one period was at the head of a separate detachment in Virginia. At the battle of Monmouth, he was engaged as a volunteer. When reviewing the troops, it was his constant custom to reward the disciplined soldier with praise, and to pass severe censure upon the negligent. Numerous anecdotes are related illustrative of the generosity, purity and kindness of his disposition. After the treacherous defection of Arnold, the baron held his name in the utmost abhorrence. One day, he was inspecting a regiment of light horse, when that name struck his ear. The man was ordered to the front, and presented an excellent appearance. Steuben told him that he was too respectable to bear the name of a traitor; and at his request the soldier adopted that of the baron, whose bounty he afterwards experienced, and brought up a son by the same name. At the siege of Yorktown, baron Steuben was in the trenches at the head of a division, where he received the first offer of lord Cornwallis to capitulate. The marquis de la Fayette appeared to relieve him in the morning; but, adhering to the European etiquette, the baron would not quit his post until the surrender was completed or hostilities recommenced. The matter being referred to general Washington, the baron was suffered to remain in the trenches till the enemy's flag was struck. After the capture of Cornwallis, when the superior American officers were paying every attention to their captives, Steuben sold his favorite horse in order to raise money to give an entertainment to the British officers, as the other major-generals had previously done. His watch he had previously disposed of to relieve the wants of a sick friend. On another occasion, when he desired to reciprocate the invitations of the French officers, he ordered his people to sell his silver spoons and forks, saying it was anti-republican to make use of such things, and adding, that the gentlemen should have one good dinner if he ate his meals with a wooden spoon for ever after. Steuben continued in the army till the close of the war, perfecting its discipline. The silence and dexterity of his movements surprised the French allies. He possessed the particular esteem of general Washington, who took every proper opportunity to recommend him to congress; from which body he received several sums of money, that were chiefly expended in acts of charity, or in rewarding the good conduct of the soldiers.

Upon the disbandment of the continental army at Newburgh, many affectionate bonds, formed amidst the danger and hardships of a long and arduous service, were to be broken asunder for ever. At this season of distress, the benevolent Steuben exerted himself to alleviate the forlorn condition of many. He gave his last dollar to a wounded black, to procure him a passage home. Peace being established, the baron retired to a farm in the vicinity of New York, where, in the society of his friends, and the amusements of books and chess, he passed his time as comfortably as his exhausted purse would allow. The state of New Jersey had given him a small farm, and that of New York 16,000 acres of land in the county of Oneida. The exertions of colonel Hamilton and general Washington subsequently procured him an annuity of $2500, from the general government. He built a log house, and cleared 60 acres of his tract of land, a portion of which he partitioned out, on easy terms, to twenty or thirty tenants, and distributed nearly a tenth among his aid-de-camps and servants. In this situation he lived contentedly, until the year 1795, when an apoplectic attack put an end to his life, in his sixty-fifth year. An abstract of his system of military manœuvres was published in 1779. The year preceding his death, he published a letter on the established militia and military arrangements. (For further information concerning baron Steuben, see Johnson's *Life of Greene*, Thatcher's *Journal*, Garden's *Anecdotes*.)

Steubenville, a flourishing post-town of Ohio, on Ohio river, is the seat of justice for Jefferson county. It was laid out in 1798, with streets crossing each other at right angles. In 1810, it contained 800 inhabitants; in 1817, 2032; and in 1830, 2937. It is 147 miles east by north from Columbus, and thirty-eight west of Pittsburg; lat. 40° 25′ N.; lon. 80° 35′ W. It contains three churches, a market-house, a woollen factory,—the machinery of which is moved by steam,—a steam paper-mill, and a flour and cotton factory, also moved by steam. There are two printing-offices, an academy, two banks, the county buildings, and many shops for mechanics and traders. The country around it, on the Virginia as well as the Ohio side of the river, is rich and populous.

Stevens, George Alexander, a whimsical and eccentric character, was born in London, and brought up to a mechanical business, which he quitted to become a strolling player. In 1751, he published a poem entitled Religion, or the Libertine Repentant, which was succeeded, in 1754, by the Birthday of Folly. These were followed by a novel called Tom Fool, and the Dramatic History of Master Edward and Miss Ann. He subsequently invented his entertainment, called a Lecture on Heads, which possessed no small portion of drollery, and became very popular. Several of his songs have also been much admired.

Stevens, Edward, an officer in the American revolution, was a native of Virginia. At the battle of the great bridge, near Norfolk, he commanded a battalion of riflemen. Soon afterwards, he was made a colonel. At the battle of Brandywine, he was greatly instrumental in saving the American forces, and received the public thanks of the commander-in-chief. He was honored in the same way for his behavior at the battle of Germantown. He was soon afterwards intrusted with the command of a brigade, and despatched to the southern army. He evinced his wonted gallantry in the battle of Camden. In that of Guilford court-house, he received a severe wound in his thigh; but, before quitting the field, he brought off his troops in good order. He closed his military career at the siege of Yorktown. From the foundation of the state constitution until the year 1790, he was a prominent member of the senate of Virginia. He died in August, 1820.

Steward. The lord high steward of England was formerly an officer who had the supervision and regulation, next under the king, of all affairs of the realm, both civil and military. The office was hereditary, belonging to the earls of Leicester until forfeited to Henry III. (See *Montfort*.) The power of this officer was so great, that the office has for a long time only been granted for some particular act, as the trial of a peer on indictment for a capital offence, the solemnization of a coronation, &c. The lord high steward is the first of the nine great officers of the crown.—The *lord steward* of the household is the chief officer of the king's household: his authority extends over all officers and servants of the royal household except those of the chamber, chapel and stable. Under the lord steward, in the counting-house, are the treasurer of the household, cofferer, controller, clerks of the green cloth, &c. It is called the *counting-house* because the household accounts are kept in it. (See *Courts.*)

Steward, in naval affairs, is an officer in a ship of war, appointed by the purser to distribute the different species of provisions to the officers and crew.

Stewart, sir James Denham, an eminent political writer, was born at Edinburgh, Oct. 10, 1713. His father was solicitor-general of Scotland. After having been admitted to the bar, he travelled on the continent five years, and formed an intimacy with the Pretender, whom he aided in his attempt in 1745. On the failure of that attempt, Stewart retired to France, and, in 1755, to Flanders. Here he published a Vindication of Newton's Chronology, a Treatise on German Coins, and a Dissertation on the Doctrine and Principles of Money. He returned to Scotland in 1763, where he was allowed to remain unmolested, and concluded his Inquiry into the Principles of Political Economy—a work of much research and acuteness, though the style and method are imperfect. He obtained a full pardon in 1771, and afterwards published various works of a philosophical and politico-economical character. His complete works were published in 1805 (in 6 vols., 8vo.). He died in 1780.

Stewart, Dugald, was born in 1753, and was the son of doctor Matthew Stewart, professor of mathematics in the university of Edinburgh. He was educated at the high school, and admitted, at the age of thirteen, as a student in the college, under the tuition of doctor Blair and doctor Ferguson. Such was the progress he made, that, at the age of eighteen, he was appointed to read lectures for his father, which he continued to do till the death of the latter. In 1780, he received a number of pupils into his house, and, in 1783, visited the continent in company with the marquis of Lothian. When doctor Ferguson was sent to North America on a mission, Mr. Stewart taught his class in moral philosophy during his absence; and, in 1785, when the professor resigned, Mr. Stewart was chosen to fill his chair, in which he continued many years with great reputation. His Elements of the Philosophy of the Human Mind (1792) was succeeded by Outlines of Moral Philosophy, for the Use of Sudents (1793); Doctor Adam Smith's Essays on Philosophical Subjects, with an Account of the Life and Writings of the Author (1801); An Account of the Life and Writings of Doctor Robertson (1803); An Account of the Life and Writings of Doctor Thomas Reid. The memoirs of Smith, Reid and Robertson were afterwards collected into one volume, with additional notes. In the election of a mathematical professor of the university of Edinburgh, Mr. Stewart was reflected on for his conduct to the successful candidate, and he therefore thought proper to publish a statement of facts relative to that election (1805). In 1796, he again took a number of pupils under his care; and, besides adding a course of lectures on political economy to the usual courses of his chair, he repeatedly supplied the place of his colleagues in case of illness or absence. In 1806, he accompanied his friend, the earl of Lauderdale, on his mission to Paris, and, in 1810, relinquished his professorship, and retired to Kinneil house, about twenty miles from Edinburgh, where he continued to reside till his death, June 11, 1828. His publications subsequently to his removal were Philosophical Essays (1810); Dissertation on the Progress of Metaphysical and Ethical Philosophy, prefixed to the Supplement to the *Encyclopædia Britannica* (unfortunately rendered imperfect by the author's ignorance of German philosophy, and left incompleté in regard to ethical philosophy—a deficiency partly supplied by Mackintosh's Essay on the Progress of Ethical Philosophy); a second volume of the Philosophy of the Human Mind (1813), with a continuation (1827); and the Philosophy of the Active and Moral Powers (1828). Stewart was a man of extensive and various acquisition, but not of a profound or original mind. As a writer, he is too often heavy and prolix, though his style is clear, pure and elaborate. In philosophy, he was a disciple of Reid, whose method and principles he followed with little deviation. (See *Philosophy.*)

Stewart, John; commonly called *Walking Stewart*, from his pedestrian feats; an eccentric individual, who wandered, on foot, over a great part of the habitable globe. He was born in London, and, having received the rudiments of education at the Charter-house, was sent out, in 1763, as a writer to Madras. Before he had been in that situation quite two years, he wrote a letter to the directors, telling them that he "was born for nobler pursuits than to be a copier of invoices and bills of lading to a company of grocers, haberdashers, and cheese-mongers;" and a few weeks after, he took his leave of the presidency. Prosecuting his route over Hindoostan, he walked to Delhi, to Persepolis, and other parts of Persia,' traversing the greater part of the Indian peninsula, and visiting Abyssinia and Nubia. Entering the Carnatic, he obtained the favor of the nabob, who made him his private secretary; and to this circumstance he, in his latter days, owed his support, the British house of commons voting him £15,000 in liquidation of his demands upon the nabob. Quitting the service of this prince, he set out to walk to Seringapatam, where Tippoo Saib compelled him to enter his army, with a commission as captain of sepoys. After serving some time in this capacity, sir James Sibbald, the commissioner for settling the terms of peace between the presidency and the sultan, procured his liberation. Stewart then started to walk to Europe, crossing the desert of Arabia, and arriving at length safely at Marseilles. Thence he proceeded, in the same manner, through France and Spain, to his native country; and, having walked through England, Scotland and Ireland, he crossed the Atlantic, and perambulated the U. States of America. The last ten years of his life were passed in London, where he died in 1822.

Stewart, Robert, marquis of Londonderry. (See *Londonderry*.)

Stewart, Gilbert, an eminent portrait painter, was born at Newport, Rhode Island, in 1757, gave early manifestations of his fondness for the pencil, and was sent to London, where he was placed under the care of Benjamin West. In the execution of portraits, the pupil soon surpassed the master. In 1784, he was established as one of the first portrait painters of London, and had, in the exhibition of that year, several full lengths of distinguished individuals. He lived elegantly and gayly; but it is believed that, notwithstanding his great success, he was obliged, by pecuniary distresses, to remove to Dublin. In 1790, he returned to his native country, from which he never again departed. He resided successively in New York, Philadelphia and its neighborhood, Washington, and last in Boston, continuing to paint with unabated power, although for years racked by the gout. Soon after his return to America, he painted the best portrait of Washington. The head he carefully finished, but never completed the remainder. He made several copies, all varying from the original. His death occurred at Boston, in July, 1828; and such of his works as could be collected were exhibited for the benefit of his family. Mr. Stewart was gifted with uncommon colloquial powers, and his genius for portrait painting was of the highest order.

Sthenic Diseases. (See *Brown, John.*)

Stheno; one of the Gorgons. (q. v.)

Stichomancy (from στίχος, a line, verse, and μαντεία, prophecy); a kind of divination, in use even among the Romans. Verses from the Sibylline Books (q. v.) were written on small slips of paper, which were shaken in a vessel, and one of them was drawn out, in order to discover some intimation of future events. Something similar has often been practised by Christians, putting a pin at hazard between the leaves of a closed Bible. The verse which was pointed out served as an oracle. Even at the present time, this is not unfrequently done by the superstitious; and some sects even resort to it for guidance on important occasions. (See *Bibliomancy*.)

Stick, Gold; an officer of superior rank in the English life-guards, so called, who is in immediate attendance upon the king's person. When his majesty gives either of his regiments of life-guards to an officer, he presents him with a gold stick. The colonels of the two regiments wait alternately month and month. The one on duty is then called *gold stick in waiting*; and all orders relating to the life-guards are transmitted through him. During that month he commands the brigade, receives all reports, and communicates them to the king.—*Silver stick*: the field officer of the life-guards when on duty is so called.

Stigma (*Greek*); with the Greeks and Romans, a mark impressed with a hot iron on the foreheads of slaves who had run away or committed theft. The Greeks used a φ, signifying φευκτος (*fugiendus*) or φευκτικος (runaway), and the Romans an F, signifying *fur* or *fugitivus*. A black coloring substance was put in the wound. Such slaves were called *stigmatici*, *inscripti*, *literati*, στιγματὶαι, στίγωνες. The Samians, who freed many slaves, and admitted them to office, were called, in derision, πολυγραμματοι, *literati*. This name, however, may have had another origin, as many believe. Prisoners of war were also branded, as the slave-traders now brand the negroes with the marks of their several owners. (See *Slavery*.) Recruits also were burned in the hand, generally with the name of the general. This was not considered a disgrace. In some countries, criminals sentenced to the galleys are branded in a similar way to this day.

Stiles, Ezra, a president of Yale college, was the son of the reverend Isaac Stiles, of North Haven, Connecticut. He graduated in that institution in 1746, with the reputation of being one of the greatest scholars it had ever produced. He then studied law, but subsequently devoted himself to theology, and settled at Newport, as pastor of the Second church, where he continued from 1755 to 1776. During this and several succeeding years, the enemy were in possession of Newport, and the inhabitants of the town scattered. Doctor Stiles was solicited to preach in several places: he accepted the invitation from the church at Portsmouth, where he was looked up to with great admiration. In 1788, he was chosen president of Yale college, and continued to adorn that station, by his great learning, abilities and piety, until his death, May 12, 1795, in the sixty-eighth year of his age. In person doctor Stiles was small, but well proportioned. His countenance was expressive of benignity and mildness, and his manners were amiable and kind. He had a thorough knowledge of the Hebrew, Greek and Latin, and French languages; in the Samaritan, Chaldee, Syriac and Arabic he had made considerable progress, and had bestowed some attention on the Persian and Coptic. He was well versed in most branches of mathematical knowledge. He had a thorough acquaintance with the rabbinical writings, and with those of the fathers of the Christian church. Sacred literature was his favorite study; and next to it he most delighted in astronomy. As a preacher, he was impressive and eloquent in a high degree: the intrinsic excellence of his sermons was enhanced by the energy of his delivery. He published various discourses, among which was an election sermon, entitled The United States elevated to Glory and Honor, preached May 8, 1783. He also wrote a history of the three judges of Charles I (Whalley, Goffe and Dixwell), and left an unfinished ecclesiastical history of New England, and more than forty volumes of manuscripts.

Stilicho; a Vandalic general, in the service of the emperor Theodosius the Great, whose niece Serena he married. Theodosius having bequeathed the empire of the East to his son Arcadius, and that of the West to his second son, Honorius, the former was left under the care of Rufinus, and the latter under the guardianship of Stilicho. (See *Western Empire.*) No sooner was Theodosius no more, than Rufinus stirred up an invasion of the Goths in order to procure the sole dominion, which Stilicho put down, and effected the destruction of his rival. After suppressing a revolt in Africa, he marched against Alaric, whom he signally defeated at Pollentia. After this, in 406, he repelled an invasion of barbarians, who penetrated into Italy under Rhadagasius, a Hun or Vandal leader, who formerly accompanied Alaric, and produced the entire destruction both of the force and its leader. Either from motives of policy or state necessity, he then entered into a treaty with Alaric, whose pretensions upon the Roman treasury for a subsidy he warmly supported. This conduct excited suspicion of his treachery on the part of Honorius, who massacred all his friends during his absence. He received intelligence of this fact at the camp of Bologna, whence he was obliged to flee to Ravenna. He took shelter in a church, from which he was inveigled by a solemn oath, that no harm was intended him, and conveyed to immediate execution, which he endured in a manner worthy his great military character. Stilicho was charged with the design of dethroning Honorius, in order to advance his son Eucherius in his place; and the memory of this distinguished captain has been treated by the ecclesiastical historians with great severity. Zosimus, however, although otherwise unfavorable to him, acquits him of the treason which was laid to his charge; and he will live in the poetry of Claudian as the most distinguished commander of his age. (See Gibbon's *Decline and Fall*, ch. 29 and 30.)

Still. (See *Distillation.*)

Stilling. (See *Jung.*)

Stillingfleet, Edward, bishop of Worcester, was born in 1635, and received his education at St. John's college, Cambridge, where he was elected, in 1653, to the first fellowship that became vacant after he had taken his bachelor's degree. His chief work, *Origines Sacræ*, or a Rational Account of Natural and Revealed Religión, is esteemed for the erudition which it displays. It was followed (1664) by a treatise On the Origin and Nature of Protestantism. Having distinguished himself by the prominent part which he took previous to the revolution, against the establishment of the Romish church in England, he was elevated to the see of Worcester by William III. Besides the writings enumerated, he was the author of an appendix to Tillotson's Rule of Faith (1676); the Unreasonableness of Separation (1683); and *Origines Britannicæ*, or Antiquities of the Churches in Britain (folio, 1685). A short time before his death, bishop Stillingfleet engaged in a controversy with Locke, respecting some part of that philosopher's writings, which he conceived had a leaning towards materialism. His death took place in 1699. His works have been collected and published entire, in six folio volumes (1710).

Still Life, in painting; the representation of inanimate objects, such as dead animals (game, fishes, &c.), furniture, sometimes with fruits and flowers in addition. The interest of such representations can consist only in the form, grouping and light; hence the pictures of still life belong to the lowest species of painting. But some scenes of still life are of a higher order than others. The object of the lowest kind is merely to produce a close imitation of nature. A higher kind combines objects so as to form an interesting whole; and the highest employs the objects only to express a poetical idea, as in representing the room of a painter, a table with Christmas presents, the game of a hunter returned from his day's sport. All these may be so represented as to have a poetical character, by reminding us of the individuals with whom they are associated. The Dutch painters Van Ælst, John Fyt, Francis Sneyders, David Koning, John Weeninx, Melchior Hondekoeter, William Kalf, and Van Streeck, are distinguished for the representation of still life.

Stimulants are all those medicinal substances, which, applied either externally or internally, have the property of accelerating the pulse and quickening the vital actions. They are among the most valuable and important of medicines, and perhaps are more often the direct means of saving life than any others. But as they are powerful, their injurious effects, when misapplied, have been even more prejudicial to mankind than their best use has been beneficial. In fact, it may be said, that the abuse of this one class of medicines, under the names of cardiacs, cordials, alexipharmics, &c., was the cause of more numerous deaths during the dark ages of medicine, than the sword and the pestilence united. The dreadful mortality of the small-pox and of fevers during the middle ages, and even during the earlier parts of the last century, were mainly owing to the administration, by nurses and physicians, of strong cordials, and heating stimulants of all sorts, the tendency of all of which was to increase the violence of the disease, although they were intended merely to expel the noxious and poisonous humors from the system. But, happily for mankind, a more cautious use of these articles has been introduced, and they are now the constant means of preserving, when properly applied, the life which they were formerly so quick to destroy. Stimulants are either simple and direct in their operation, as the external application of heat in all forms, dry and moist, by friction, &c., the application to the stomach of hot liquors, spices, camphor, hartshorn, warm and aromatic gums and oils, as mint, cardamom, cajeput, ginger, assafœtida, red pepper, spirits of turpentine, &c.; or they act first as stimulants, but produce afterwards effects of a different character, as is the case with all which are termed *diffusible* stimulants, as wine, brandy, and spirits of all sorts, opium, &c., all of which are highly stimulant at first, and in small quantity, but afterwards, and when taken in larger doses, produce exhaustion, debility, sleep and death. The first class are, upon the whole, the most safe, and should be always used, in preference to the last, when they can be had, in all cases of suspended animation, from cold, drowning, suffocation, &c.; while the others are more valuable for their secondary and remote effects, by means of which they ease pain, relieve spasm, &c.; and for these purposes they should be used freely, as they can do no hurt, while the violence of the disease subsists. But they should never be resorted to, unless pain is urgent, or debility become so great as to endanger life.

Stink-Pot; an earthen jar, charged with powder, grenades, and other materials of an offensive and suffocating smell. It is sometimes used by privateers, to annoy an enemy whom they design to board.

Stippling. (See *Engraving*.)

Stiria (in German, *Steiermark*); a province of the Austrian empire, which takes its name (see *Marches*) from the county of Steier, in the Land above the Ens. The eastern part was anciently a portion of Pannonia, the western of Noricum, which were conquered by the Romans at the close of the last century before the Christian era. The Avars afterwards occupied Upper Stiria, and the Veneti Lower Stiria, whence the latter was called the *Wendish mark*. Charlemagne set markgraves over it; and, as the counts of Steier were among the number, it hence received the name of *Steiermark*. It is bounded north by the archduchy of Austria, east by Hungary, south by Carniola and Carinthia, and west by Carinthia and Salzburg. Population, 836,128; square miles, 8480. Upper Stiria lies to the north, and is mountainous, consisting, in a great measure, of a continuation of a branch of the Alps. Lower Stiria comprises the southern part. A number of lateral branches of the Alps extend into Lower Stiria, but become gradually lower as they remove from the main chain, till they present nothing but small elevations. There are, however, but few extensive plains. The rivers are the Drave, Save, Muhr and Ens. The climate in the elevated parts is cold, but the air is pure and elastic; the soil, except on the high mountains, very fertile, producing wheat, oats, rye, potatoes, and in warmer situations, wheat. Great attention is paid to raising cattle, and poultry is abundant. Agriculture is in a backward state. Stiria abounds in mineral productions. The iron mines are the most important, and yield annually from 16,000 to 20,000 tons. Salt and coal are abundant. Gold, silver and copper hardly defray the expense of working: lead is more common. Cobalt, arsenic and molybdena are found. The manufactures are chiefly derived from the mines. The exports consist of metals, corn, flax, wine, clover-seed and cattle. The Stirians have the hospitality, frankness and simple habits of an agricultural people; but they are imperfectly educated, though parish schools have been established in the principal villages. The majority are Catholics, though the Protestants enjoy a full, and the Jews a limited, toleration. The chief town is Grätz. (q. v.)

Stirling, Lord. (See *Alexander*, *William*.)

Stith, William, president of William and Mary college, Virginia, was born in that province. He embraced the ecclesiastical profession, and, in 1740, withdrew from the laborious office which he had sustained in the college. He published a history of the first discovery and settlement of Virginia (Williamsburg, 8vo., 1747). It brings down the history only to 1624. An appendix contains a collection of charters relating to the period comprised in the volume. Besides the copious materials of Smith, the author derived assistance from the manuscripts of his uncle, sir John Randolph, and from the records of the London company, put into his hands by colonel William Byrd, president of the council, and from the valuable library of this gentleman. Mr. Stith was a man of classical learning, and a faithful historian; but he was destitute of taste in style, and his details are exceedingly minute.

Stoa. (See *Stoics*.)

Stoat. (See *Ermine*.)

Stobæus, John, the name of a Greek writer, who, about the middle of the fifth century, was the author of a variety of miscellaneous works, most of which have perished; but his collection of excerpts from those of various philosophers and poets, has come down to posterity, and is important, from the fragments of lost authors which it contains. It consists of four books, of which the third and fourth form a separate work; and its extracts are important contributions to the history of philosophy. The best edition is that of Heeren (Göttingen, 1792—1801, 4 vols.).

Stock Exchange; originally the building, in London, where the stock brokers assemble to transact their business. It was erected in 1804, in consequence of the inconvenience to which they were subjected, and the general interruption of public business, occasioned by the stock-jobbers, who intermingled with them when they transacted business in the bank rotunda. No person is allowed to act here but regular stock brokers, who are balloted for annually. The name is also applied in general to the place where the same business is transacted in other cities. The great stock exchanges of Europe are those of Amsterdam, London, Paris, and Frankfort on the Maine, which decide the price of stocks in all the rest of the world. Those of Petersburg, Berlin and Vienna are of much less importance. We have given an account of the stocks of different countries in the article *Public Stocks*: we shall here give a view of the manner of creating, purchasing, and transferring stock, as practised in London. New loans are paid at stated periods, by instalments of 10 or 15 per cent., and the terms on which they are made generally occasion an increase on different kinds of stock, to the amount of three per cent. and upwards (according to the emergency and state of the money market) more than the sum borrowed. Thus, for every hundred pounds capital, new stock is created to the amount of one hundred and three pounds. The difference is called the *bonus*, and the aggregate of the additional stock of different kinds is termed *omnium*. If these be disposed of separately, before all the instalments are paid, the different articles are called *scrip*, which is an abbreviation of *subscription*. The value of the stocks is perpetually fluctuating, the variations being occasioned by unfounded as well as real causes. Any occurrence by which the security of the state is either hazarded or strengthened, though one may be as imaginary as the other, has an immediate effect upon the price, which will advance or fall as the news may be considered good or otherwise. The gaining of a victory, the signing of an armistice, and the conclusion of a peace, have each a direct influence on the rise of the stocks; whilst, on the other hand, the loss of a battle, the death of a sovereign, the commencement and protraction of war, are equally certain to lower the funds; even the mere report of a momentous event will frequently lead to a considerable alteration of price. The quantity of stock in the market will also either depreciate or raise the value, as purchasers may be more or less numerous. The manner of buying stock is, to give a specific number of pounds for a nominal hundred pounds. Thus, if the purchase be made in the three per cents., and the current price be eighty pounds, that sum is paid for one hundred pounds stock, which yields a dividend of three pounds per annum. Persons conversant in these things will sometimes obtain a considerable advantage by transferring stock from one branch of the funds to another, the variations in the value of the different stocks not being always adjusted to their proper level. Every possible degree of facility, consistent with prudence, is given to the purchase and sale of stocks; yet the intervention of a stock broker is generally thought requisite, as the identity of the persons making the transfer must be vouched for, before the witnessing clerk will allow his signature to be made in the bank books. All transfers of stock are made on the appointed transfer days; and no stock can be transferred twice on the same day. The space between the shutting and opening the books of any stock is usually about six weeks. (See *Stock-Jobbing*.)

Stock-Fish. (See *Cod*, vol. iii., p. 288.)

Stock-Jobbing. The practice to which the term *stock-jobbing* is more particularly applicable, is that which is carried on amongst persons who possess but little or no property in any of the funds, yet who contract for the sale or transfer of stock at some future period, the latter part of the day, or the next *settling day*, at a price agreed on at the time. Such bargains are called *time bargains*, and are contrary to law; and this practice is *gambling*, in every sense of the word. The business of *jobbing* is carried on to an amazing extent, and is of this character: —A. agrees to sell B. £10,000 of bank stock, to be transferred in twenty days, for £12,000. A., in fact, does not possess any such property; yet if the price of bank stock on the day appointed for the transfer should be only £118 per cent., he may then purchase as much as will enable him to fulfil his bargain for £11,800; and thus he would gain £200 by the transaction. Should the price of bank stock advance to 125 per cent., he will then lose £500 by completing his agreement. As neither A. nor B., however, may have the means to purchase stock to the extent agreed on, the business is commonly arranged by the payment of the difference—the profit or the loss—between the current price of the stock on the day appointed and the price bargained for. In the language of the *alley*, as it is called in London (all dealings in the stocks having been formerly transacted in 'Change alley), the buyer in these contracts is denominated a *bull*, and the seller a *bear*. As neither party can be compelled to complete these bargains (they being illegal), their own sense of "honor," the disgrace, and the loss of future credit, that attend a breach of contract, are the sole principles on which this singular business is regulated. When a person refuses, or has not the ability to pay his loss, he is termed a *lame duck*; but this opprobrious epithet is not bestowed on those whose failure is owing to insufficient means, provided they make the same surrender of their property voluntarily, as the law would have compelled had the transaction fallen within its cognizance. This illegal practice is nothing more than a wager as to what will be the price of stocks at a fixed period; but the facility which it affords to extravagant and unprincipled speculation, and the mischief and ruin which have frequently followed it, determined the legislature to lay a penalty of £500 on every person making such *time bargains*; and the like sum on all brokers, agents and scriveners employed in transacting or writing the said contracts. By the same statute also (7 Geo. II, ch. 8), a similar penalty is imposed upon all persons contracting for the sale of stock, of which they are not possessed at the time of such bargain; and £100 on every broker or agent employed in procuring the said bargain. (See *Stock Exchange.*)

Stockbridge; a post-town of Berkshire county, Massachusetts, on both sides of the Housatonic. The river runs nearly west through this town, and then turns to the south. The intervals are very rich, and well cultivated. There are some factories on the river. It is a very pleasant town, about 130 miles west of Boston, on the mail route from Springfield to Albany. Population in 1830, 1580. Here was the residence of the Stockbridge tribe of Indians, till they removed to New Stockbridge, near the Oneidas, in New York, in 1775. This town suffered severely from the attacks of the Indians in 1754—5.

Stockholm; the capital of Sweden, and the handsomest city in the north of Europe, situated at the junction of the lake Mälar with an inlet of the Baltic; lon. 18° 4′ E.; lat. 59° 21′ N.; population in 1826, 79,526. Stockholm is generally described as standing on seven islands, but is chiefly built on three, of which the small one in the centre constituted the original city, and is still the most busy part of the town, and the residence of the principal merchants. The Norrmalm and Södermalm, the two principal suburbs, occupy several islands. The form of the city is an oblong, and its situation is extremely picturesque, as well from the mixture of land and water as from the unevenness of the ground on which it is built. The view from the higher grounds embraces edifices of all sorts, and vessels at anchor, or sailing across the channels, and is terminated by mountains, with a variety of romantic scenery. Constantinople is perhaps the only city of Europe which surpasses it in situation. There are thirteen stone bridges, and several of wood. The houses in the central part are of stone or brick, covered with plaster, of four or five stories, with their foundations on piles, but in the suburbs of only one or two stories, and partly of wood. Among the public buildings are the royal palace, the palace or house for the nobility of the diet, arsenal, bank, royal stables, warehouse for iron, hospitals, and twenty-four churches, eighteen of which are Lutheran. The royal palace is a large quadrangular edifice, the lower part of the walls of polished granite, the upper part of brick, covered with stucco, and is accounted second to no palace in Europe, except that at Versailles. The literary associations are numerous and respectable; the principal are the academy of sciences, founded in 1739, having a museum, library, an observatory, and 160 members; the Swedish academy, founded in 1786, for improving the Swedish language, having eighteen members; the academy of fine arts, history and antiquities; the military academy, academy for painting and sculpture, and for music, and the medical college. The royal library contains about 50,000 volumes, and there are several important private collections. Stockholm is the mercantile emporium of the eastern part of Sweden. The harbor is of great depth, and so capacious that 1000 vessels may lie here in safety; and the largest come close up to the quays. The number of vessels that enter annually is, on an average, about 1000. The chief exports are iron and steel, also copper, pitch, tar, and timber; imports, colonial produce, wine, fruit, salt, and British manufactures. The manufactures are various, but not on a large scale. (See *Sweden.*)

Stockings are made of only one thread, entwined so as to form a species of tissue, extremely elastic, and readily adapting itself to the part it is employed to cover. The tissue cannot be called cloth, for it has neither warp nor woof, but approaches it closely, and for the purposes to which it is applied, is much superior. It is well known that the ancient Romans had no particular covering for the legs (see *Breeches*); but during the middle ages, hose, or leggins, made of cloth, came into use; and, at a later period, the art of knitting stockings was invented. Very different accounts are given of the time and country of this important invention, some attributing it to the Scots, and others deriving it from Spain. Woven stockings are manufactured by the machine called *stocking frame*, which is exceedingly ingenious, but too complex to be described without plates. It was invented by William Lee, of Nottinghamshire (England), in 1589. He met with little encouragement in his attempts to set up an establishment in England, but was invited into France by Henry IV, and received with great favor. Henry's assassination soon after interrupted his prospects, and he died in Paris in great poverty. A knowledge of his machine was carried back to England by some of his workmen, who established themselves in Nottinghamshire, which has since continued to be the principal seat of the manufacture. For near 200 years, few improvements were made on Lee's invention, and two men were usually employed on one frame; but it has recently been much improved, and adapted also to the manufacture of ribbed stockings. (See Beckmann's *History of Inventions*, iv, article *Knitting Netts* and *Stockings*.)

Stocks; a wooden machine used to put the legs of offenders in, for the restraining of disorderly persons, or as a punishment for certain offences.

Stocks, Public. (See *Public Stocks*.)

Stockton, Richard, a signer of the Declaration of Independence, was born near Princeton, Oct. 1, 1730, of an ancient and respectable family. After graduating at the college of New Jersey, in 1748, he commenced the study of the law, and, being admitted to the bar in due time, soon attained great eminence as an advocate. In 1766, he crossed the Atlantic, and spent two years in making the tour of England, Scotland and Ireland. When in London, he was consulted on American affairs by various distinguished persons, including the marquis of Rockingham and the earl of Chatham, and at Edinburgh was complimented with a public dinner, by the authorities, and the freedom of the city. On his return to New Jersey, in 1768, he was appointed one of the royal judges of the province, and a member of the executive council. At the time when the revolutionary struggle commenced, his prospects from the royal favor were very bright; but he sided zealously with those of his countrymen who were determined on independence, and, June 21, 1776, was chosen, by the provincial congress of the colony, a delegate to the general congress then sitting at Philadelphia, where he discharged numerous, and often arduous, duties with unwearied energy and fidelity. At first, he is understood to have entertained some doubts as to the expediency of the declaration of independence at the time when it was made; but they were soon dissipated, and he spoke in its behalf. Nov. 30 of the same year, he was taken prisoner by a party of refugee royalists, who dragged him from his bed at night, and carried him to New York. In the way thither he was treated with great indignity, and in the city he was thrown into the common prison, where he was deprived of even the necessaries of life. When intelligence of his capture and sufferings reached congress, that body passed a resolution, directing general Washington to make immediate inquiry into the truth of the report, and, if he found reason to believe it, to send a flag to general Howe, remonstrating against this departure from the humane procedure which had marked the conduct of the states to prisoners who had fallen into their hands, and to know of him whether he chose that this should be the future rule for treating prisoners. Mr. Stockton was at length released; but the shock given to his constitution by the hardships of his confinement was mortal. His health gradually declined, and, after languishing for several years, he died at Princeton, Feb. 28, 1781, in the fifty-first year of his age.

Stoddard, Solomon, pastor of the church of Northampton, was born at Boston, in 1643, and graduated at Harvard college in 1662, of which he was subsequently made a fellow. Intense application having impaired his health, he went to Barbadoes as chaplain to governor Serle, and preached to the dissenters in that island for nearly two years. On his return, he was invited to take charge of the church of Northampton, and was ordained Sept. 11, 1672. In this place he continued until his death, Feb. 11, 1729, in the eighty-sixth year of his age. Mr. Stoddard is considered one of the greatest divines of New England. His sermons were plain, but powerfully searching and argumentative. He was a man of learning, and particularly able in controversy. He waged a polemical contest with doctor Increase Mather respecting the Lord's supper, maintaining that the sacrament was a converting ordinance, and that all baptized persons, not scandalous in life, may lawfully approach the table, though they know themselves to be unconverted, or destitute of true religion; and most of the churches of Connecticut were induced by his arguments to coincide in his sentiments. His diligence was so unremitting that he left a considerable number of sermons which he had never preached; and so fine was his hand-writing, that one hundred and fifty of his discourses are contained in a small duodecimo manuscript volume, which may easily be carried in the pocket. He published various sermons and treatises.

Stoichiometry (from στοιχεῖον, element, original matter). The article *Affinity, Chemical*, treats of the general principles of chemical combinations and solutions. Neutrality is that state of solution of two substances in which each seems to have lost its peculiar characteristics. That branch of chemical science which treats of the proportions which the substances must have, when they enter the state of neutrality, has been called by modern chemists *stoichiometry*.

Stoics; an ancient philosophical sect, founded by Zeno, which received its name from the στοα (*porch* or *portico*), called *Pœcile* (q. v.), in Athens, where Zeno taught his doctrines (about B. C. 300). Zeno (q. v.), a contemporary of Epicurus, after having studied the systems of the Socratic, Cynic and Academic schools, opposed to scepticism views resting on rigorous moral principles. Philosophy is, according to him, the way to wisdom; wisdom itself is the knowledge of human and divine things; and virtue is the application of wisdom to life. The chief heads of his doctrine—logic, physics and morals—were connected into a systematic whole. In logic, which he defined the science of distinguishing truth and falsehood, he made experience the basis of all knowledge; ideas, or conceptions, which, in all respects, resemble their objects, he called true, and the power of judging according to principles, the mark of a sound reason. In his physics, he refers to nature itself for the highest standard of human duties, and derives the moral precepts from the laws of the universe. He assumes two uncreated and eternal, but material principles of all things—the passive matter, and the active intelligence, or God, which resides in matter, and animates it. The Deity is the original intelligence, and of an ethereal, fiery nature: he made the world, as an organic whole, out of matter and form, by the separation of the elements; and he also rules the world, but is limited in his operations by unchangeable fate or the necessary laws of nature. The universe, according to Zeno, is penetrated by the divine intelligence as by a soul, and is therefore living and rational, but destined to be destroyed by fire. He considers the heavenly bodies, and the powers of nature, of a divine character, and therefore admits the worship of several gods, and teaches that their connexion with men may be beneficial to the latter. The human soul he considers as produced by the union of the creative fire with air, and endowed with eight faculties—the five senses, the powers of generation, speech, and reason: the latter, as the active principle, governs the whole soul. The ethics of the Stoics treats the will of God (which also animates the soul of man), or nature, as the source of the moral law, which binds man to aim at divine perfection, since this only can lead to a virtuous life, harmonizing with God and nature, which is the only true happiness. Their practical maxim is, Follow nature, live according to nature, or, which amounts to the same thing, Live in accordance with the laws of consistent reason. They considered virtue the highest good, and vice the only evil; every thing else is indifferent, or only relatively agreeable or disagreeable. They call human actions honest, when they have a reasonable foundation in the nature of the agent; perfectly proper, and therefore obligatory, when good in themselves; intermediate or lawful, in so far as, indifferent in themselves, they are expedient or allowable only in certain relations, but criminal, when they are inconsistent with the reason of the agent. Virtue they accordingly explain as the true harmony of man with himself, independent of reward or punishment, to be attained by correct moral judgment, and the mastery over the passions and affections: this virtue presupposes the highest inward tranquillity, and elevation (apathy) above the pleasures and pains of sense; it makes the wise man not destitute of feeling, but invulnerable, and gives him a dominion over his body which permits even suicide. Virtue, therefore, is represented chiefly under the character of self-denial. Zeno, and his celebrated disciple and successor, Cleanthus, both put themselves to death at an advanced age, the latter by starvation. Cleanthus, originally a pugilist, gave to the Stoic philosophy its distribution into dialectics, rhetoric, ethics, politics, physics and theology. He enlarged theology by his proof of the existence of God, and expressed his reverence of one God in his admirable Hymn, yet extant, *Cleanthi Hymnus* (ed. Sturz, 1785). Chrysippus of Soli (died 208 or 212 B. C.), the successor of Cleanthus, carried logic and dialectics to greater perfection, and, in physics, proved that the influence of fate, or the necessary relation of things, neither destroyed the operation of divine providence nor the free agency of man. In morals, he distinguished, like his predecessors, a natural and a positive law, and derived the latter from the mutual relations of men, as fellow-creatures of the same nature. His successors were Zeno, Antipater (both of Tarsus), Panætius of Rhodes, the pupil of Antipater, and Posidonius of Apamea, in Syria, the disciple of Panætius. Chrysippus, through his writings, also exerted a most important influence upon the Roman philosophers, among whom Seneca, Epictetus, and Marcus Aurelius (see *Antoninus*), were Stoics. They employed themselves principally on practical questions; and their moral doctrines have so many points of resemblance to those of Christianity, as to have given rise to the opinion, that they were borrowed from the latter.—See Tiedemann's *System der stoischen Philosophie* (Leipsic, 1776).

Stola; a garment worn by the Roman women in later times, they having originally worn the *toga* only, like the men. The *stola* was a long tunic with sleeves, reaching to the feet, worn both by the rich and the poor, with this difference only, that the *stola* of the latter had but a single gold stripe, whilst that of the former had stripes of gold and purple, and at the bottom a broad border or fringe, called *instita*. Public women, and those who had been found guilty of adultery, were forbidden to wear the *stola;* hence they were called *togatæ*. By *stola*, therefore, a chaste woman, as well as a woman of condition, was designated. *Instita* was used in the same way.—The *stola*, which forms a part of the sacerdotal dress of Catholic priests, is a long, broad, white band, of silk or silver stuff, lined with stiff linen, worn by the deacons over the left shoulder, and reaching to the right hip, like the riband of an order; but the priests wear it over both shoulders, and hanging down across the breast. It is marked with three crosses, and not unfrequently has little bells at the end. Prelates wear it ornamented with pearls and embroidery. The *stola* is necessary for reading the mass; hence *jura stolæ*, or the dues which are paid for baptisms, marriages, interments, confirmation, confession, and similar religious services performed by the priest. This name has been retained by the German Protestants, although they no longer use the *stola*. The teachers of the ancient church were supported by the voluntary gifts of the faithful (oblations); and it was long left optional with laymen whether they would give any thing to the priest on such occasions, or not. What was given, was paid over, as late as the sixth century, to the bishop, who allowed a part to the parochial clergy. After that time, every pastor acquired the right to retain what he received in this way from his parishioners; but the councils, down to the tenth century, insisted that the priests should not ask any thing for the above services, but merely receive what was voluntarily given. In the sixteenth century, this permission became a right (*jus*), confirmed by the ecclesiastical authorities; hence *jura stolæ*.

Stolberg; an ancient German house, which was formerly divided into the two lines of the Hartz and the Rhine. The latter becoming extinct, its possessions fell to the former, which, subsequently to 1638, was divided into the elder line, in the two branches of Ilsenburg (extinct in 1710) and Gedern, and the younger line, in the two branches of Stolberg-Stolberg and Stolberg-Rossla. To the Gedern branch belonged the Stolberg-Wernigerode family, that of Stolberg-Gedern (see *Albany*), now extinct, and that of Stolberg-Schwarza, also extinct. In the time of the empire, the counts of Stolberg belonged to the Wetteravian college. Their possessions have been mediatized, and are now under Prussian or Hanoverian sovereignty.

Stole, Groom of the; the eldest gentleman of his majesty's bed-chamber, whose office it is to present and put on his majesty's shirt, every morning, and to put the room in order. (See *Stola*.)

Stomach (*stomachus; ventriculus; gaster*); a membraneous bag, situated in the epigastric region, which receives the food from the œsophagus. Its figure is somewhat oblong and round. It is largest on the left side, and gradually diminishes towards its lower orifice, where it is the least. Its superior orifice, where the œsophagus terminates, is called the *cardia;* the inferior orifice, where the intestine begins, the *pylorus*. The anterior surface is turned towards the abdominal muscles, and the posterior opposite the lumbar vertebræ. It has two curvatures: the first is called the great curvature of the stomach, and extends downwards from one orifice to the other, having the omentum adhering to it; the second is the small curvature, which is also between both orifices, but superiorly and posteriorly. The stomach, like the intestinal canal, is composed of three coats, or membranes:—1. The *outermost*, which is very firm, and forms the peritonæum; 2. the *muscular*, which is very thick, and composed of various muscular fibres; and, 3. the *innermost*, or *villous coat*, which is covered with exhaling and inhaling vessels, and mucus. These coats are connected together by cellular membrane. The glands of the stomach which separate the mucus are situated between the villous and muscular coat, in the cellular structure. The nerves of the stomach are very numerous, and come from the eighth pair and intercostal nerves. The lymphatic vessels are distributed throughout the whole substance, and proceed immediately to the thoracic duct. The use of the stomach is to excite hunger, and partly thirst, to receive the food from the œsophagus, and to retain it, till, by the motion of the stomach, the admixture of various fluids, and many other changes, it is rendered fit to pass the right orifice of the stomach, and afford chyle to the intestines. (See *Gastric Juice*, *Digestion*, *Dyspepsia*.)

Stomach-Pump. A small pump—in this application called the *stomach-pump*—has lately been introduced into practice, for removing poisons from the stomach in cases where the action of vomiting cannot be excited. It has already saved many lives. It resembles the common small syringe, except that there are two apertures near the end, insteal of one, which, owing to valves in them, opening different ways, become what are called a *sucking* and a *forcing* passage. When the object is to extract from the stomach, the pump is worked while its sucking orifice is in connexion with an elastic tube passed into the stomach; and the discharged matter escapes by the forcing orifice. When it is desired, on the contrary, to throw cleansing water or other liquid into the stomach, the connexion of the apertures and the tubes is reversed. As a pump may not be always procurable when the occasion for it arises, the profession should be aware, that a simple tube will, in many cases, answer the purpose as well, if not better. If the tube be introduced, and the body of the patient be so placed that the tube forms a downward channel from the stomach, all fluid matter will escape from the stomach by it, as water escapes from a funnel by its pipe; and if the outer end of the tube be kept immersed in liquid, there will be, during the discharge, a siphon action of considerable force. On changing the posture of the body, water may be poured in through the same tube to wash the stomach. Such a tube, made long enough, might, if desired, be rendered a complete bent siphon, the necessary preliminary suction being made by a syringe, or by the mouth through an intervening vessel.

Stomach-Staggers; a dangerous disease with horses, which is even yet but little understood. In the stable, the horse dozes, and rests his head in the manger; he then wakes up, and falls to eating, which he continues to do until the distention of the stomach becomes enormous; for the peculiarity of the complaint consists in the total stoppage of digestion, and the uneasy feeling of distention, consequent to such indigestion, appears to deceive the horse, whose morbid excitement induces him to continue eating. This he does until the distention prevents the return of the blood from the head; and the animal dies from apoplexy, or his stomach bursts. When recovery has taken place, it has been only in very mild cases. (See Loudon's *Encyclopædia of Agriculture*.)

Stone, or **Calculus**; every hard concretion, not bony, formed in the body of animals. The article *Calculus* treats of the variety and chemical composition of these concretions. We shall add here a few words respecting their probable origin, and the cure of this disease in man. These concretions originate immediately in a disturbance of the secretions; but this disturbance may, perhaps, in most cases, be caused by a disordered condition of the juices, particularly of the blood, and a want of due assimilation. This may be supposed, because, in the complaints of the gravel and the gout, which frequently interchange, the digestion almost always suffers, and acid is found in the primæ viæ; also because cattle often have biliary calculi in the spring, which disappear after they have fed for a time on green fodder. Calculi form themselves in those secreted fluids which contain many ingredients, and which have an inclination to assume a solid form, especially in such as are collected in particular receptacles (the gall bladder and urinary bladder); and they have even been found in the salivary ducts. They consist of a nucleus and several surrounding coats, similar or various in their nature. Their component parts vary according to the fluid in which they have been formed. They obstruct the passages, and prevent the discharge of the secreted fluid; they irritate the vessels in which they are contained, and thereby cause convulsions, pains, inflammations and suppurations; they also affect, indirectly, other organs, e. g. the stomach, producing sickness and vomiting; the stones in the bladder occasion itching in the glands of the genitals, pains in the loins, testicles, &c. The most common calculi are, *A.* biliary calculi, often found in great numbers in the bile, sometimes in the liver, from the size of a pea to that of a hazel-nut. They are dark, brown, black, and usually polished on several parts of the surface, and generally occasion disease only when they move, and are very jagged. But in such cases violent pains exist, which extend from the right side to the centre of the body. They also sometimes cause periodical and obstinate jaundice. The convulsions and pains which they occasion frequently require the application of particular medicines to relieve the immediate suffering, besides those directed against the disease itself: the patient is often relieved from them by vomiting or by stool. *B.* Urinary calculi are sometimes a kind of coarse sand, called *gravel*, which sinks immediately to the bottom of the vessel in which the urine is left. Sometimes they are real stones, of the size of a pea, of a walnut, or even of the fist. They are found either about the kidneys, and then cause pains, inflammations, and suppuration, or in the pelvis of the kidneys. In this case, from time to time, single stones pass into the bladder, with violent pains extending from the region of the kidneys downward or backward, and are carried off with the urine; or they originate in the bladder itself, where they often acquire a very considerable size. They cause pains in the region of the bladder and in the perinæum, and great suffering during the discharges of the urine. It often happens that this can be discharged only in certain positions, and drop by drop, with great pain; is slimy, smells offensively, and is mixed with blood and gravel. The examination by the catheter affords the most certain information respecting the existence of calculi, if, as sometimes happens, the stone does not lie enclosed (encysted) in a certain part of the bladder. To destroy urinary stones, internal means have been recommended; but they are little to be depended on. If the stone in the bladder increases so much that it prevents entirely the discharge of the urine, it is necessary to remove it by the knife (lithotomy), or by breaking it to pieces in the bladder (lithotrity). The operation of lithotomy may be performed in four different ways: 1. By the apparatus minor, an operation described by Celsus, and very simple, requiring few instruments; whence the name. The operator introduces his middle finger and fore finger up the anus, and endeavors to bring the stone towards the neck of the bladder. He then cuts on the left side of the perinæum, directly on the stone. 2. In the high operation, the bladder is opened on the opposite side, over the pubes. 3. When the apparatus major is applied, the urethra is widened so much, that a forceps can be introduced, and the stone extracted. The name of apparatus major is used on account of the number of instruments required. 4. The lateral operation is generally considered as the safest and most effectual, and is the most common. Its object is to divide that part of the urethra which suffered extremely in the application of the apparatus major, from the means used to distend it; and as the lower side of the urethra cannot be divided far enough, without the rectum being wounded, the cut is directed sideways. This is the reason of the name. Lately, the operation of cutting the bladder through the rectum has been introduced.

Stone, Thomas, a signer of the Declaration of Independence, was a descendant of William Stone, governor of Maryland during the protectorate of Cromwell. He received a classical education. Having subsequently studied law, he commenced its practice in Fredericktown, Md. In May, 1775, he took his seat in the general congress, and was for several years re-elected to the same station. Soon after the declaration of independence, to which he had subscribed his name, he was one of the committee appointed by congress to prepare articles of confederation. After the plan reported was agreed to, Mr. Stone declined a reëlection, but became a member of the Maryland legislature, in which he greatly contributed to procure favor for the system adopted. In 1783, he was again sent to congress. He then finally retired, and engaged actively in the duties of his profession; but, in 1787, the death of his wife engendered a deep and abiding melancholy. His health declined; and, on the fifth of October of the same year, he suddenly expired, in the forty-fifth year of his age, when on the point of embarking for England.

Stone Ware. Under the denomination *stone ware* are comprehended all the different artificial combinations of earthy bodies which are applied to useful purposes. (See *Pottery*.)

Stones, Precious. (See *Gems*.)

Stones, Showers of. (See *Meteoric Stones*.)

Stonehenge. (See *Salisbury Plain*.)

Stonington; a seaport, and incorporated borough, in New London county, Connecticut. It is situated in the township of Stonington, on a point of land, half a mile long, at the eastern extremity of Long Island sound. It is a commercial town, and has several vessels employed in the fisheries, and others in the West India and coasting trade. Population in 1830, 3401. August 8, 1814, while a British fleet was lying off this harbor, a brig of eighteen guns was ordered to bombard the town. The village was wholly unprepared for this attack, and was, for a considerable time, in much confusion. At length, two eighteen pounders were found; and with these so active and well directed a fire was kept up on the brig, that she was greatly damaged, and compelled to cut her cables and retire, with many killed and wounded.

Stool of Repentance. (See *Cutty Stool.*)

Stop; a word applied by violin and violoncello performers to that pressure of the strings by which they are brought into contact with the finger-board, and by which the pitch of the note is determined. Hence a string, when so pressed, is said to be *stopped.*—*Stop of an organ;* a collection of pipes similar in tone and quality, which run through the whole, or a great part, of the compass of the instrument. In a great organ, the stops are numerous and multifarious.

Stop-Laws. (See *Execution.*)

Storax; a gum-resin, obtained by incisions in the branches of a small tree (*styrax officinalis*), which grows wild in the countries about the Mediterranean. The leaves are alternate, oval, petiolate, green above, whitish and downy beneath, resembling those of the quince. The flowers are disposed in racemes, white, and very much resemble those of the orange. The fruit is whitish and downy, juiceless, and contains one or two angular nuts. The storax of commerce is chiefly obtained from Asiatic Turkey. It has a fragrant odor, and an agreeable, slightly pungent, and aromatic taste; is stimulant, and in some degree expectorant. Formerly it was much employed in medicine, but now is little used, except in perfumes. *Benzoin* is a gum-resin, obtained, in a similar manner, from a species of *styrax*, growing wild in the East Indies. We have three species of *styrax* in the southern parts of the U. States.

Stork (*ciconia*). These tall and stately birds are easily distinguished from the herons by the small mouth, the angle not reaching beyond the eyes, as with the last; the beak is also destitute of the nasal furrow, but is similar in other respects, is straight, long, pointed, and compressed. Most of them inhabit the eastern continent, especially between the tropics. South America is not altogether destitute of them; but we have none in the U. States. They walk slowly, with measured steps; but their flight is powerful and long continued. They have no voice, but produce a clattering with their bills, by striking the mandibles together. Their food consists of fish, reptiles, small quadrupeds, worms, and insects. The common stork of Europe (*C. alba*) is about four feet in length, from the tip of the beak to the extremity of the nails. The prevailing color of the plumage is white, with some black about the wings. It is found throughout the greater part of Europe, but passes the winter in Africa. It takes up its residence and breeds in the midst of cities, and is every where protected, as it renders important services in destroying noxious animals. Among the ancients, to kill them was considered a crime, which, in some places, was punished even with death; and, like the ibis, this bird became an object of worship. The stork is remarkable for its great affection towards its young, but especially for its attention to its parents in old age. The gigantic stork, or adjutant of Bengal (*C. argala*), is a celebrated bird, very common about the mouths of the Ganges, and even in the streets of Calcutta, where it is protected by law, as also in other parts of the East Indies. It is stoutly framed, and the extreme length is nearly seven feet. The head and neck are destitute of feathers, and covered with a reddish and callous skin; and from the middle of the latter hangs a fleshy appendage. The bill is enormously large. It lives on reptiles, fish, &c., and even on quadrupeds, whose bones it breaks previously to swallowing. In captivity its gluttony is extreme.

Storr, Gottlob Christian, doctor of theology, consistorial counsellor and first minister to the court at Stuttgart, was born, in 1746, at Stuttgart, where he died in 1805. Storr was distinguished for his pious life, and faithful fulfilment of his duties as professor of theology and preacher at Tübingen, as well as for his great learning, exhibited in various works, among which are his Observations on the Syriac Translations of the New Testament, in 1772, and on the Arabian Gospels, in 1775, both in German; *Observationes ad Analogiam et Syntaxin Hebraicam pertinentes* (1779); his Commentary on the Epistle to the Hebrews; his learned treatise On the true Object of Christ's Death (2d ed. Tübingen, 1809); On the Object of the Evangelical History, and the Epistles of John (1786); New Defence of the Revelation of John (1783), the *Dissertationes in Apocalypsis quædam Loca* belonging to it, and his *Doctrinæ Christianæ Pars theoret. e sacr. Lit. repetita* (1793).

Storthing; the Norwegian diet (from *Thing*, assembly, and *stor*, great, elevated). The citizens qualified to vote choose electors, who from among themselves or their constituents, select the representatives, whose number is not to be under seventy-five, nor above one hundred. A member of the *storthing* must be thirty years old; must have resided ten years in the realm; must hold no office, civil or military; must not be attached to the court, nor receive a pension. Generally the *storthing* is held every third year, at the beginning of February, in the capital, Christiania. After the *storthing* is opened by the king or his deputy, it chooses one fourth part of its members to form the *logthing:* the other three fourths form the *odelsthing*. Each *thing* holds its sessions separately, and with open doors, and the debates are published, unless a resolution to the contrary be passed. The *storthing* is authorized to make and abolish laws; to impose taxes; open loans; see that the finances are properly administered; grant the civil list, &c. The government protocols, and all public papers, including treaties with foreign powers, must be laid before them, the secret articles only excepted, and these must not be contrary to the public ones; it may summon any body before it, except the king and viceroy; and it confers naturalization. Laws are proposed in the *odelsthing*, by its members, or by a counsellor of state: if they pass there, they go to the *logthing*. The king is to sign the bills, or to decline so doing. If a bill, twice rejected by the king, is adopted without alteration by a third regular *storthing*, it becomes a law, even without the king's sanction. In this manner nobility was abolished in Norway.

Stosch, Philip, baron von, a distinguished numismatist, born 1691, at Cüstrin, in Germany, studied at Frankfort on the Oder, and was designed for the ecclesiastical profession; but his taste led him to devote his time to numismatics. In 1708, he visited Jena, Dresden, Leipsic, and other places in Germany, for the purpose of examining cabinets of medals and antiquities. In 1710, the Dutch statesman Fagel employed him on a mission to England, where he became acquainted with sir Hans Sloane, lords Pembroke, Winchelsea, Carteret, and other virtuosi. In 1714, he went to Rome; and, returning to Germany, he engaged in collecting other antiques, particularly engraved gems. At Augsburg he discovered the celebrated "*Peutinger Table.*" (q. v.) He was afterwards English resident at Rome, for the purpose of observing the conduct of the Pretender and his adherents. This post becoming hazardous after the accession of pope Clement XII, who favored the Stuarts, baron Stosch withdrew to Florence, where he died in 1757. His collections, and especially those of cameos and engraved gems, were peculiarly valuable. A catalogue of the latter was drawn up by Winckelmann. The baron himself published two volumes of plates, representing his gems, engraved by Picart and Schweikart.

Stoves. Stoves differ from fire-places (q. v.) by enclosing the fire so as to exclude it from sight, the heat being given out through the material of which the stove is composed. The common Holland stove, of which we have an almost infinite variety of modifications, is an iron box, of an oblong square form, intended to stand in the middle of a room. The air is admitted to the fire through a small opening in the door, and the smoke passes off through a narrow funnel. The advantages of this stove are, 1. that, being insulated, and detached from the walls of the room, a greater part of the heat produced by the combustion is saved. The radiated heat being thrown into the walls of the stove, they become hot, and, in their turn, radiate heat on all sides to the room. The conducted heat is also received by successive portions of the air of the room, which pass in contact with the stove. 2. The air being made, as in furnaces, to pass through the fuel, a very small supply is sufficient to keep up the combustion, so that little need be taken out of the room. 3. The smoke, being confined by the cavity of the stove, cannot easily escape into the room, and may be made to pass off by a small funnel, which, if sufficiently thin and circuitous, may cause the smoke to part with a great portion of its heat, before it leaves the apartment. These circumstances render the Holland stove one of the most powerful means we can employ for keeping up a regular and effectual heat, with a small expense of fuel. The disadvantages of these stoves are, that houses containing them are never well ventilated, but that the same air remains stagnant in a room for a great length of time. A dryness of the air is also produced, which is oppressive to most persons, so that it often becomes necessary to place an open vessel of water on the stove, the evaporation of which may supply moisture to the atmosphere. Stoves are very useful in large rooms, which are frequented occasionally, but not inhabited constantly; as halls, churches, &c. In cold countries, where it is desirable to obtain a comfortable warmth, even at the sacrifice of other conveniences, various modifications of the common stoves have been introduced, to render them more powerful, and their heat more effectual. The Swedish and Russian stoves are small furnaces, with a very circuitous smoke flue. In principle, they resemble a common stove, with a funnel bent round and round, until it has performed a great number of turns or revolutions, before it enters the chimney. It differs, however, in being wholly enclosed in a large box of stone or brick work, which is intersected with air pipes. In operation, it communicates heat more slowly, being longer in becoming hot, and also slower in becoming cold, than the common stove. Russian stoves are usually provided with a damper, or valve, at top, which is used to close the funnel or passage, when the smoke has ceased to ascend. Its operation, however, is highly pernicious, since burning coals, when they have ceased to smoke, always give out carbonic acid in large quantities, which, if it does not escape up chimney, must deteriorate the air of the apartment, and render it unsafe.

Cellar Stoves and Air Flues. Such is the tendency of heated or rarefied air to ascend, that buildings may be effectually warmed by air flues communicating with stoves in the cellar, or any part of the building below that to be warmed. A large suite of apartments may be sufficiently heated in this way by a single stove. The stove, for this purpose, should be of a kind best adapted to communicate heat. It should be entirely enclosed in a detached brick chamber, the wall of which should be double, that it may be a better non-conductor of heat. The space between the brick chamber and stove should not exceed an inch. In the apparatus of the Derbyshire and Wakefield infirmaries, which has been imitated in this country, the whole of the air is repeatedly conducted, by numerous pipes, within half an inch of the stove and its cockle. For the supply of fuel, the same door which opens into the chamber, should open also into the stove, that there may never be any communication with the air of the cellar. A current of external air should be brought down by a separate passage, and delivered under the stove. A part of this air is admitted to supply the combustion; the rest passes upward in the cavity between the hot stove and the wall of the brick chamber, and, after becoming thoroughly heated, is conducted through passages in which its levity causes it to ascend, and be delivered into any apartment of the house. Different branches being established from the main pipe, and commanded by valves or shutters, the hot air can be distributed at pleasure to any one or more rooms at a time. This plan is very useful in large buildings, such as manufactories, hospitals, &c., on account of the facility with which the same stove may be made to warm the whole, or any part of them. The advantage of a long vertical draught enables us to establish a more forcible current of warm air. The rooms, while they are heated, are also ventilated, for the air which is continually brought in by the warm pipes, displaces that which was previously in the room, and the air blows out at the crevices and key-holes, instead of blowing in, as it does in rooms with common fireplaces. (See Bigelow's *Technology*, 2d ed. 1832.)

Stow, John; an English historian and antiquary, born about 1525, in London. His father, a tailor, brought him up to his own business; but his mind early took a bent towards antiquarian researches. About the year 1560, he formed the design of composing the annals of English history, for the completion of which he quitted his trade. For the purpose of examining records, charters, and other documents, he travelled on foot to several public establishments, and purchased old books, manuscripts, and parchments, until he had made a valuable collection. Being thought to be favorable to the ancient religion, an information was laid against him, in 1568, as a suspicious person, who possessed many dangerous books. The bishop of London accordingly ordered an investigation of his study, in which, of course, were found many popish books among the rest; but the result has not been recorded. Two years afterwards, an unnatural brother, having defrauded him of his goods, sought to take away his life by preferring one hundred and forty articles against him, before the ecclesiastical commission; but he was acquitted. He had previously printed his first work, entitled a Summarie of the Englyshe Chronicles, compiled at the instance of Dudley, afterwards earl of Leicester, which was published in 1565, and afterwards continued by Edmond Howes, who printed several editions. He contributed to the improvement of the second edition of Holinshed, in 1587, and gave corrections and notes to two editions of Chaucer. At length, in 1598, appeared his Survey of London, the work on which he had been so long employed, and which came to a second edition during his lifetime. He was very anxious to publish his large chronicle, or history of England, but lived only to print an abstract of it, entitled *Flores Historiarum*, or Annals of England. From his papers, Howes published a folio volume, entitled Stow's Chronicle, which does not, however, contain the whole of the larger work, which he had left, transcribed for the press, and which is said to have fallen into the possession of sir Symonds Dewes. A license was granted him by James I, "to repair to churches or other places, to receive the charitable benevolence of well-disposed people," in the seventy-eighth year of his age. He died, afflicted by poverty and disease, in 1605, at the age of eighty. Stow's Survey has run through six editions, the last in 1754, with considerable additions, and a continuation of the useful lists.

Stowe; a parish in Buckinghamshire, England, two miles north-west of Buckingham, containing the celebrated seat, garden and pleasure-grounds of the duke of Buckingham. The house, situated on an eminence rising from a lake, measures 916 feet from east to west; the saloon, 60 feet long, 43 feet broad, and 56½ feet high, cost nearly 60,000 dollars; the state drawing-room, 50 feet by 32, and 22 feet high, contains a collection of fine pictures, mostly by the old masters. The library consists of 10,000 printed volumes, with many valuable manuscripts. The house is approached through a Corinthian arch, 60 feet high by 60 wide. The gardens comprise four hundred acres of highly decorated grounds. Temples, obelisks, statues, grottoes, &c., scattered around in great profusion, seem to realize the descriptions of enchanted gardens. The Elysian fields, watered by a small rivulet, issuing from a grotto, and emptying into a lake, contain the figures of heroes, poets and philosophers. In the temple of Ancient Virtue, a circular building of the Ionic order, stand the statues of Homer, Lycurgus, Socrates, and Epaminondas. The temple of British worthies contains busts of Shakspeare, Milton, Pope, Newton, Bacon, Locke, &c. The temple of Concord and Virtue is a handsome building, of an oblong shape, surrounded with 28 fluted Ionic columns. Lord Cobham's pillar is a column 115 feet high, surmounted by a statue. The Gothic temple, a triangular building, with a tower at each end, is richly adorned with old painted glass.

Stowell, lord. Sir William Scott, who was created baron Stowell in 1821, is the elder brother of lord Eldon (q. v.), and was born at Newcastle, in 1745. His father, a respectable proprietor of coal mines there, determined to train him to his own business. But the talents and eager inclination for study, manifested by the young man, finally induced his father to send him to Oxford, where, after taking his degree of doctor of civil law, he was appointed Camden professor of history. His lectures there gained him reputation; and, in 1779, he left the university, and entered upon the study of ecclesiastical law. His practice in the spiritual courts soon became extensive, and raised him, in 1788, to the post of king's advocate-general: he was at the same time knighted. In 1799, he was appointed judge of the high court of admiralty, which post he resigned a few years ago. (See *Commercial Law*.) Sir William Scott entered parliament in 1792, and continued to represent the university of Oxford, in that body, from 1802 till he was summoned to the house of peers, in 1821.

Strabo, a distinguished Greek geographer, was born at Amasia, in Cappadocia, about 19 A. D., studied rhetoric and the Aristotelian philosophy, and afterwards embraced the Stoic doctrines. He travelled through Greece, Italy, Egypt, and Asia, endeavoring to obtain the most accurate information in regard to the geography, statistics and political conditions of the countries which he visited. The time of his death is unknown. His great geographical work, in seventeen books, contains a full account of the manners and governments of different people: his materials were derived from his own observations and inquiries, or from the geographical works of Hecatæus, Artemidorus, Eudoxius, and Eratosthenes, now lost, and the writings of historians and poets. His work is invaluable to us. The last editions are those of Siebenkees (continued by Tzschucke, but not completed, Leipsic, 1796—1811, 7 vols.) and of Coray (4 vols., Paris, 1819.) Those of Casaubon (1620, fol.) and Almeloveen (Amsterdam, 1707, 2 vols., fol.) are also highly esteemed.

Strada, Famianus; an Italian historian, and elegant writer of modern Latin poetry, born at Rome, in 1572. He entered into the society of the Jesuits in 1592, and became professor of rhetoric at the Roman college, where he resided till his death, in 1649. His most famous works are a History of the Wars in the Netherlands, in Latin, and *Prolusiones Academicæ*, which have been repeatedly published. In one of these prolusions, he has introduced ingenious imitations of the style of the most celebrated Roman poets, of which there are many translations, including those published by Addison, in the Guardian.

Strafford, sir Thomas Wentworth, earl of, an eminent minister and statesman, was the eldest son of sir William Wentworth, of an ancient family in Yorkshire. He was born in London, in 1593, and entered of St. John's college, Cambridge. After leaving the university, he travelled, and, on his return, received the honor of knighthood. The death of his father, in 1614, gave him possession of a large fortune; and he was soon after appointed *custos rotulorum* of the west riding of Yorkshire, in lieu of sir John Savile. In 1621, he was chosen member of parliament for the county of York; and when Charles I asserted that the commons enjoyed no rights but by royal permission, sir Thomas Wentworth, already distinguished for ability, strenuously called upon the house to maintain that their privileges were rights by inheritance. In 1622, he lost his first wife, of the noble family of Clifford, and in 1625, married Arabella, second daughter of Holles, earl of Clare. On the convening of the new parliament, in the same year, he was one of the six popular members who were prevented serving their country in that assembly, by being appointed sheriffs for their respective counties. He submitted to this arbitrary act in silence; and, soon after, the duke of Buckingham, alarmed at the measures taken against him in parliament, made him overtures, which proved ineffectual, and the favorite revenged himself by obliging him to restore his office of *custos rotulorum* to sir John Savile. When Charles, among other expedients for raising money, had recourse to a forced general loan, Wentworth refused to pay his contribution, and was first imprisoned in the Marshalsea, and then confined to a range of two miles round the town of Dartford. This restraint was, however, removed when it became necessary to summon a new parliament, in 1628; and he again took his seat for Yorkshire, and became one of the most conspicuous advocates of the petition of right. As he had now proved the strength of his abilities, high terms were offered him by the court, which he finally accepted; and, in 1628, he was created baron Wentworth, and some months afterwards a viscount and privy-counsellor, and on the resignation of lord Scrope, nominated president of the north. The assassination of Buckingham, soon after, freed him from a powerful enemy at court, and he became so influential in the king's councils, that his powers in the four northern counties, over which he presided, became enormous; and his commission contained fifty-eight instructions, of of which scarcely one did not exceed or violate the common law. In the exercise of this authority, he displayed equal haughtiness, impetuosity, and ability, and, by his strictness in levying exactions, increased the revenue in his district to four or five times the previous amount. Having assiduously cultivated the friendship of archbishop Laud, he was selected by that prelate to proceed to Ireland, as lord-deputy, in 1632. He greatly improved the state of the country, both as regarded law, revenue, and trade (the manufacture of linen being of his own creation); but, at the same time, nothing could be more arbitrary than his system of government, it being his boast that he had rendered the king as absolute in Ireland "as any prince in the whole world could be." On the first symptoms of resistance to the royal authority, he counselled the strongest measures; and after the failure of the king's first expedition against Scotland, he was sent for from Ireland, and created earl of Strafford, and knight of the garter. He returned with the full title of lord lieutenant, with a view to gain subsidies and troops, in which he fully succeeded; and, again repairing to England, took the command in the north, but found himself obliged to retire before the Scottish army, and retreat to York. Charles was now by his necessities obliged to call the long parliament; on which Strafford, aware of the enmity which he had inspired among the popular leaders, wished to return to his government; but the king, hoping that his great talents would be serviceable, encouraged him by a solemn promise that "not a hair of his head should be touched by parliament." Strafford's apprehensions were well founded. The very first movement of the party opposed to arbitrary power, was to impeach him of high treason, with which charge Pym appeared at the bar of the house of lords, November 18, 1640. The articles of impeachment, at first nine in number, were afterwards increased to twenty-eight, the object of which was to convict him of an attempt to subvert the fundamental laws of the country. As in the case of Laud, it was easy to prove that he acted as a friend and promoter of arbitrary measures, but not to substantiate any particular fact to justify a capital charge. Although treated with the extreme of legal rigor, and debarred the assistance of counsel, his own great abilities and force of mind supplied every deficiency; "And never man," says Whitelock, the chairman of the impeaching committee, "acted such a part, on such a theatre, with more wisdom, consistency and eloquence, or with greater reason, judgment and temper." His defence, indeed, was so strong, that the original impeachment was deserted, for the unjustifiable proceeding of a bill of attainder. The bill passed by a great majority; and so great was the animosity borne towards him, that the house of lords was intimidated into compliance. The king, who had imprudently endeavored to stop the bill by his personal interference, had not sufficient firmness to redeem the pledge of safety which he had previously given, but yielded to the advice of his counsellors, backed by a letter from Strafford himself, who urged him, for his own safety, to ratify the bill. This act has the semblance of being truly heroical; yet it is probable that he did not think that the king would have been swayed by it, since, being assured of the fatal truth, he lifted his eyes to heaven, and, with his hand on his heart, exclaimed, "Put not your trust in princes, nor in the sons of men; for in them there is no salvation." His conduct, from this time to his execution, was in the highest degree composed and noble. At the scaffold, he addressed the people, expressing entire resignation to his fate, and asserting the good intention of his actions, however misrepresented. He fell in the forty-ninth year of his age, lamented by some, admired by more, and leaving behind a memorable but certainly not an unspotted name. The parliament, not long after his death, mitigated his sentence as regarded his children; and in the succeeding reign, his attainder was reversed. He married three times, and, by his second wife, left an only son, and several daughters. (See Macdiarmid's *Lives of British Statesmen.*)

Stralsund; a town of Prussian Pomerania, capital of a government of the same name, formerly capital of Swedish Pomerania, on a strait which separates the island of Rugen from the main land; 120 miles east of Hamburg; lon. 13° 32′ E.; lat. 54° 19′ N. population, 15,800. It has a safe and capacious harbor, admitting ships of fifteen feet draught. It was formerly one of the principal Hanse towns. (See *Hansa.*) It has considerable trade. Corn is the principal article of export, of which there are sometimes shipped from 30 to 40,000 quarters. It contains a government house, town house, public library, &c. The aspect is gloomy, the streets narrow, the houses low, built of brick, and remarkable for being pointed at the top. (See *Pomerania.*)

Stramonium (sometimes called *Jamestown-weed*), a species of *datura*, is now common in waste places throughout the U. States, as well as in Europe. It belongs to the *solaneæ*, the same natural family with the tobacco and nightshade, and amply sustains the poisonous character of the tribe. The stem is herbaceous, fleshy, two or three feet high, and branching, furnished with large angular and dentate leaves. The flowers are large, and the corolla funnel-shaped. All parts of the plant exhale a strong and nauseous odor. It is one of the most dangerous of narcotic poisons; and when taken internally, produces vertigo, torpor, and death. Goats, however, eat it with impunity. In small doses, it has been employed with advantage in convulsive and epileptic affections; and smoking the dried leaves has proved beneficial in asthmatic complaints.

Strand; a street in London, running from Westminster to London proper. It was formerly the road which connected the two towns, when they were entirely distinct from each other, and received its name from its position along the Thames.

Strangles; a disorder which attacks most horses, and generally between the ages of three and five years. When strangles occurs in the stables, and now and then also in the field, it proves a severe disease, and shows itself under the appearance of a cold, with cough, sore throat, swelling of the glands under the jaws, or behind and under the ears. Sometimes there is not much external swelling, and the tumors break inwardly, and nature effects a cure. At others, they break outwardly, and sometimes disperse. When the swelling lingers, poultices are preferable to fomentations. Peal recommends blistering the part, to promote suppuration. The horse should be kept very cool, and bran mashes, with warm water, should be his principal support, unless the complaint last long, and produce much weakness, when malt mashes should be substituted. Bleeding is only advisable when the early symptoms are violent.

Strappado; a barbarous military punishment, now abandoned. It consisted in having the hands of the offender tied behind his back, by which he was drawn to a certain elevation, by a rope, and then left to run suddenly towards the ground, when, being stopped with a sudden jerk, his shoulders were dislocated. This was also one of the punishments of the inquisition, and of many criminals in Italy.

Strasburg (anciently *Argentoratum*); a city of France, capital of Lower Rhine, formerly capital of Alsace, situated at the conflux of the Brusche and Ille, half a mile west of the Rhine; lon. 7° 45′ E.; lat. 48° 35′ N.; population, 50,000, of which one third are Protestants. It is an ancient, strong, and commercial city, of semicircular form, built on a plain, and divided into several parts, by canals, over which are several bridges. The houses are chiefly of a red stone, lofty, but often heavy and inelegant, built after the German manner; the language and customs of a majority of the inhabitants being still German. A few streets are wide and straight, but most of them are narrow. The fortifications are extensive, divided into the old and new. The citadel is a regular pentagon, lying to the east, and with its out-works extending almost to the Rhine. Strasburg is a bishop's see, and contains a cathedral, six Catholic churches, seven Lutheran, and one Reformed, two hospitals, two theatres, two public libraries, a botanic garden, a medical school, a high school, a royal and a Lutheran academy, or university. The cathedral, or minster, founded in 1015, and not completely finished till 1365, is one of the most distinguished specimens of Gothic architecture existing. Its tower, 474 feet high, is ascended by a stairway of 725 steps, and is a masterpiece of architecture, being built of hewn stone, cut with such nicety as to give it at a distance some resemblance to lace. The tower was planned and begun by Erwin of Steinbach, after whose death, in 1318, it was continued by his brother John. The clock is also a masterpiece of mechanism, for, besides the hour of the day, it describes the motions of the planets. The Protestant church of St. Thomas contains a splendid monument, erected by Louis XV, to marshal Saxe. This city is famous in the history of the reformation; and the two principal Protestant seminaries in France are at Strasburg and Montauban. It is favorably situated for trade, in a fertile and well-cultivated country, the Rhine connecting it with Switzerland on the one side, and with Netherlands on the other. The exports are corn, flax, hemp, wine, and spirituous liquors; also linen, sail-cloth, blankets, carpets, hardware, leather, cotton, lace, tobacco, and snuff. Guttenberg (q. v.) is said to have invented the art of printing at Strasburg, in 1436. The ancient bishopric of Strasburg, in Alsace, lying on both sides the Rhine, has been secularized, and is now incorporated with France and Baden. (See *Alsace.*) It contained 500 square miles, with a population of 30,000 souls.

Strategy (from the Greek στρατηγία, military command, military skill); the art and science of leading armies, the art of conducting military operations; a branch of military science, which has only of late been treated separately, and in a certain sense contradistinguished to tactics, which treats of the mode of disposing troops for battle, of directing them during its continuance, and of all the exercises, arms, &c., necessary to fit them for action. Some writers on strategy have run into extremes, as is usual in treating of subjects whose limits have not been settled. Bülow (q. v.), for instance, has attempted to reduce this branch of the military art to the geometrical calculation of angles, lines, &c., in his Theory of Modern Warfare—a work which was opposed by Henry de Jomini (q. v.) and other French writers. The latter, in his *Traité des grandes Opérations Militaires*, avoids Bülow's fault of theorizing, and founds his views more on the results of actual experience, especially on the campaigns of Frederic the Great and Napoleon, but falls, in his turn, into partial views, by insisting constantly on the principle of keeping forces concentrated, and leading them by the shortest possible way to meet the enemy. He has forgotten that all armies are not so trained for battle as the troops of those two great generals, and that the forte of all generals does not lie in the conduct of an engagement. His theory of internal lines of operations, therefore, though correct in certain cases, cannot hold good so universally as he represents. Though the principles of Bülow will never be adopted in their whole extent, yet he did considerable service to military science, by directing attention to what is now called strategy, as a particular branch. To the works mentioned in the articles *Bülow* and *Jomini*, we may add the archduke Charles's (q. v.) Principles of Strategy, illustrated by the Description of the Campaign of 1796, in Germany.

Stratford upon Avon; a town in Warwickshire, England, upon the Avon, ninety-four miles north-west of London, celebrated as the birth-place and burial-place of Shakspeare. The house in which he is said to have been born, is still shown; that in which he resided after his return to Stratford, and died, was pulled down, in 1759, by a clergyman who bought the place a few years before. The same person cut down the famous mulberry tree, planted by Shakspeare. The church contains the monument and bust of Shakspeare. The latter was originally colored to resemble life, and, in 1793, was painted white, by order of Malone. These coats of paint have much disfigured the characteristic markings of the bust. This monument was erected within seven years after his death, and contains the Latin distich cited in the article *Shakspeare*. On the grave-stone beneath are the following lines, attributed to himself:

Good friend, for Jesus' sake, forbear
To digg the dust encloased here;
Blest be the man that spares these stones,
And curst be he that moves my bones.

Strath, in Scotland, is generally understood to mean a valley broader than a dale or glen, which receives its peculiar appellation from a river passing through it, as *Strathbogie*, *Strathspey*, &c., or some particular characteristic, as *Strathmore*, the Great Valley, &c., which traverses Scotland on the south side of the Grampian mountains.

Stratus. (See *Clouds*.)

Straw. In the manufacture of straw hats, the culms of several kinds of grasses are used. The Leghorn straw is the culm of a sort of wheat sown on poor soils, and cut green. Rye straw is much used in this manufacture. The straw is cut at the joints; and the outer covering being removed, it is sorted of equal sizes, and made up into bundles of eight or ten inches in length, and a foot in circumference. They are then to be dipped in water, and shaken a little, so as not to retain too much moisture: the bundles are afterwards to be placed on their edges, for the purpose of bleaching, in a box which is sufficiently close to prevent the evaporation of smoke. In the middle of the box is an earthen dish, containing brimstone, broken in small pieces: this is set on fire, and the box covered over and kept in the open air several hours. It is the business of one person to split and select the straws for fifty others, who are braiders. The splitting is done by a small machine, made principally of wood. The straws, when split, are termed *splints*, of which each worker has a certain quantity: on one end is wrapped a linen cloth, and they are held under the arm, and drawn out as wanted. Plaiters should be taught to use their second fingers and thumbs, instead of the fore-fingers, which are often required to assist in turning the splints, and thus much facilitate the platting; and they should be cautioned against wetting the splints too much.' The finest hats are made in the neighborhood of Leghorn, whence they are exported in great numbers. The Dunstable manufactures in Bedfordshire, England, are of a fine quality. The plaiting of straw has also been recently carried on very extensively in Norfolk county, Massachusetts, and the plait is of excellent quality. In the English plait, the straws are flattened in a hand mill, previous to working; but in the Leghorn, the pressure is applied after the plaiting is made.

Strawberry (*fragaria*). This is one of the most wholesome and most delicious of our fruits. The pulp is light, melting, and, notwithstanding, but little watery, and does not undergo the acetous fermentation in the stomach. It exhales a most delightful perfume, and the flavor is exquisite, especially immediately after being plucked from the stem. The plant belongs to the natural family *rosaceæ*, together with the rose and raspberry. The root gives out several long, slender, creeping shoots, which take root at intervals, and form so many new stocks; the leaves are composed of three leaflets, supported on a long foot-stalk, which is provided with stipules at the base. From the midst of the leaves arise two or three simple, slender, silky stems, from four to six inches high, and terminated by a few white flowers, disposed in a sort of corymb. After flowering, the receptacle increases, acquires a pulpy and succulent consistence, and finally a red color, when the strawberries have attained maturity. The strawberry is easily cultivated, and numerous varieties have been produced; some of great excellence have been obtained recently. It forces well, and, with a little trouble in choosing a succession of sorts, may be had almost every month in the year. An open situation, and rich, loamy soil, rather strong, is required for most varieties; and from their large mass of foliage and flowers, they must, till the fruit is set, have copious supplies of water. The row culture is most convenient, and frequent renewal ensures vigorous plants and large fruit. A palatable jam, wine and vinegar are prepared from strawberries; and they are sometimes preserved entire, in sirup or in wine. Besides the cultivated strawberry, we have a wild species, common in most parts of the U. States.

STREAKS; the uniform ranges of planks on the bottom or sides of a ship, or the continuations of planks joined by the ends to each other, and reaching from the stem, which limits the vessel forward, to the stern-post and fashion-pieces, which terminate her length abaft.

STREETS, PAVEMENT OF. (See *Pavement*.)

STRELITZ (Russian, *strielzi*, or *strelzi*, guards); the life-guards of the Russian czars, until the reign of Peter the Great. They were instituted in the latter half of the sixteenth century, by Ivan Wasiliewitsch, and formed, also, the standing infantry of the empire, amounting, sometimes, to 40,000 men. Their numerous privileges and their frequent insurrections rendered them as formidable as the Roman pretorians (q. v.), or the Turkish janizaries. (q. v.) Peter the Great dissolved the corps in 1697, in consequence of an insurrection, put several thousands to death, and banished the rest to Astrachan. Having been guilty of some disturbances here, they were entirely dispersed and destroyed in 1705.

STRETTO (*Italian*) signifies, in music, that the movement to which it is prefixed, is to be performed in a quick, concise manner.

STRIKE; a measure of capacity, containing four pecks.

STRIKE, among seamen, is a word variously used. When a ship, in a fight, or on meeting with a ship of war, lets down or lowers her top-sails at least half-mast high, she is said to *strike*, meaning that she yields, or submits, or pays respect to the ship of war. Also, when a ship touches ground in shoal water, she *strikes*. And when a top-mast is to be taken down, the word of command is, *Strike the top-mast*, &c.

STROGANOFF; a distinguished Russian family, descended from a merchant, Anika Stroganoff, who, in the sixteenth century, resided at Solwytschegodzka, and gave rise to the discovery of Siberia. The czar Ivan granted to Jacob and Gregory Stroganoff the desert country along the Kama, from Perm to the Sülwa river, and on the banks of the Tschussowa. They were originally fur-traders, but, to defend themselves against the Siberian and Nogaian robbers, were allowed to build forts and, collect troops. They also administered justice, suppressed insurrections, and, in fact, protected the north-east of Russia. They had extended the Moscovite territory to the chain of the Ural; and when the Mongolian conqueror of Siberia, Kutschjum, intended to destroy the settlements of the Stroganoffs, on the Kama, they received, May 30, 1574, a grant of the enemy's country, which allowed them to settle on the banks of the Tobol, to wage war with Kutschjum, and to work mines. They offered five bands of robbers, commanded by revolted Cossack hetmanns, employment in their service, exhorting them to give up their dishonest mode of life. Thus the Cossack Jermack and his companions were induced to leave the Wolga, and, being joined by many additional forces collected by the Stroganoffs, entered Siberia. The country was conquered after three battles, and the taking of Kutschjum's camp by storm. The capital, Sibir, was captured, October 26, 1581. (See the *Chronicle of the Stroganoffs*, Müller's *History of Siberia* (in German), and Karamsin's *History of Russia*.)—A descendant of Anika, baron Gregory Stroganoff, since 1827 a member of the council of the Russian empire, is proprietor of the important salt and iron works in Perm, established by his ancestors. From 1805 to 1808, he was Russian ambassador at Madrid; afterwards at Stockholm, and in the memorable period of 1821, at Constantinople, where he distinguished himself by talent, firmness and humanity, in the most critical conjunctures, and labored strenuously to protect the Greeks and the Greek church.

STROKE OF THE SUN (*coup de soleil*). When the direct rays of the sun, during the hot season of the year, are allowed to strike for some time upon the skin, an inflammation is produced, accompanied with blisters and sharp pains. After a few days, the inflammation ceases, and the epidermis peels off. If the head is exposed to the sun, the brain is sometimes affected in a similar manner. The blood collects in great quantities, the vessels become swollen, the face and eyes appear red, and violent pains in the head follow. A feverish heat pervades the whole body; lethargy, or suffering which prevents sleep, apoplexy, with or without extravasation of blood, or an inflammation of the blood ensues, and often terminates fatally. Exposure by sleeping in the sun is particularly dangerous.

STROMBOLI. (See *Lipari Islands*.)

STRONG, Caleb, LL. D., a governor of Massachusetts, was born in 1744, at Northampton, in that state. He graduated at Harvard university, in 1764, and, after studying law, commenced its practice in his native place. In the beginning of the revolution, he took an active part in the cause of liberty. In 1775, he was a member of the committee of safety, and, the following year, of the state legislature. Of the convention which formed a constitution for the state in 1779, he was also a member, and, on the organization of the government, was elected a senator. Two years afterwards, he was offered a seat on the bench of the supreme court, but declined it. In 1787, he was chosen a member of the convention which framed the constitution of the U. States, and likewise of the state convention by which it was adopted. When the general government went into operation, he was chosen a senator in congress. In 1800, he was chosen governor of Massachusetts, and continued in that station for seven consecutive years. In 1812, he was reëlected to it, and retained it until 1816. He then retired from public life, and died in November, 1820. In the discharge of all the various functions with which he was intrusted, governor Strong was distinguished for wisdom, uprightness, and patriotism, whilst he possessed, in an equally eminent degree, the virtues adapted especially to private life. He was an accomplished scholar, jurist and statesman.

Strong Beer. (See *Brewing*.)

Strontites; a peculiar earth, discovered in 1793, and thus named by doctor Hope, of Edinburgh, in allusion to its having been first noticed in a mineral brought from Strontian, in Argyleshire. Klaproth examined the mineral the same year, without a knowledge of the experiments of doctor Hope, and called the earth *strontian*. Pure strontites is of a grayish-white color, possesses a pungent, acrid taste, and, when powdered in a mortar, the dust that rises irritates the lungs and nostrils. It is an unusually heavy earth, approaching barytes in specific gravity. It requires rather more than 160 parts of water at 60° to dissolve it; but of boiling water much less. On cooling, it crystallizes in thin, transparent, quadrangular plates, seldom exceeding a quarter of an inch in length, and frequently adhering together. These crystals contain about 68 parts in 100 of water; are soluble in little more than twice their weight of boiling water. The solution of strontites has the property of converting vegetable blues to green. It tinges the flame of a candle of a beautiful red color. The experiment may be made by putting a little of the salt composed of nitric acid and strontites into the wick of a lighted candle, or by setting fire to alcohol holding muriate of strontites in solution.* Sir H. Davy decomposed this earth by means of the same processes as he employed in the decomposition of the other earths. To the metallic base of it he gave the name of *strontium*, which is a white, solid metal, much heavier than water, and bears a close resemblance to barium in its properties. When exposed to the air, or when thrown into water, it rapidly absorbs oxygen, and is converted into strontian. The salts of strontites are in general more soluble than the salts of barytes, but less so than the salts of lime. The *sulphate* of strontites is of a pure white color, and is not sensibly soluble in water. *Anhydrous nitrate* of strontites may be prepared by dissolving carbonate of strontites in nitric acid, evaporating the solution to dryness, redissolving and evaporating slowly, till the salt crystallizes. It crystallizes in regular octahedrons, which are perfectly transparent. It is soluble in little more than its own weight of water, at the temperature of 60°; but is insoluble in alcohol. The *hydrous nitrate* of strontites is formed occasionally, when a solution of nitrate of strontites, sufficiently concentrated, is set aside for crystallization. Its crystals are oblique, rhombic prisms. About one quarter of its weight is water. The *carbonate* of strontites is slightly soluble in water impregnated with carbonic acid. It is easily formed by pouring an alkaline carbonate into a solution of nitrate of strontites. *Muriate* of strontites is formed by dissolving carbonate of strontites in muriatic acid, and concentrating the solution till it crystallizes. The crystals are very long needles, consisting, most commonly, of six-sided prisms. Water, at the temperature of 60°, dissolves one and a half times its weight of this salt. Boiling water dissolves any quantity whatever. The crystals slowly deliquesce in a moist atmosphere. When heated, they undergo the watery fusion, and then are reduced to a white powder. In a strong red heat, it melts into a liquid.

Native salts of strontites.—1. *Celestine* is found in right rhombic prisms of 104°—the primitive form of the species—which are sometimes terminated by dihedral summits, and also have their acute lateral edges truncated, besides presenting various other partial modifications. Cleavage takes place readily, parallel with all the faces of the primary figure; lustre vitreous, inclining to resinous, sometimes, also, a little to pearly, upon the lateral faces of the prism; color white, passing to sky and smalt-blue; also reddish-white; transparent or translucent; brittle; hardness between calcareous spar and fluor; specific gravity 3.8. Besides occurring in perfect crystals, celestine is found in broad, foliated, in columnar and fibrous masses, as well as compact; the latter, however, appears to be a mixture of celestine and common limestone. It is composed of strontites 56, and sulphuric acid 42. Before the blow-pipe, it decrepitates and melts, without perceptibly coloring the flame, into a white, friable enamel. Reduced to powder, it phosphoresces upon red-hot iron. Celestine is most commonly found in kidney-shaped masses, disseminated through the more recent limestones, sandstones and amygdaloidal rocks. It also occurs in gypsum rocks, along with marl. Beautiful crystals, of a prismatic form and massive columnar varieties, occur in the sulphur mines of Sicily; also, under the same circumstances, at Bex, in Switzerland, and near Cadiz, in Spain. Tabular crystals and lamellar masses are found at Monte Viale, and in the Bristol channel, in England. But the most magnificent crystals come from Strontian island, in lake Erie. Handsome blue foliated specimens are also found at Lockport, in New York. It is also found in several other countries.—2. *Strontianite* is found regularly crystallized in the form of six-sided prisms, modified on the edges, and terminated in a pyramid. It affords, on cleavage, a right rhombic prism for its primary form, whose angles are 117° 32′ and 62° 28′. But regular crystals are very uncommon. Lustre vitreous, slightly inclining to resinous; color asparagus or apple-green, pale yellowish-brown, yellow and gray; white; streak white; transparent or translucent; hardness intermediate between calc-spar and fluor; specific gravity 3.6. Strontianite is found, for the most part, in fibrous masses, the fibres slightly diverging. It is composed of

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* The beautiful red fire, which is now so frequently used at the theatres, is composed of the following ingredients:—40 parts dry nitrate of strontites, 15 parts of finely powdered sulphur, 5 parts of chlorate of potash, and 4 parts of sulphuret of antimony. No other kind of mixture than rubbing together on a paper is required.

Strontites, ...	69.50
Carbonic acid, ...	30.00
Water.	.50
	100.00

It is soluble with effervescence in the muriatic and nitric acids; and paper dipped into this solution, and afterwards dried, will burn with a red flame. It melts before the blow-pipe, and intumesces, at the same time phosphorescing with a red light. It is dissolved by borax, with a violent effervescence, into a clear globule. Strontianite occurs in metallic veins, traversing primitive and transition mountains. It is found at Strontian, in Scotland; at Bráunsdorf, in Saxony; at Leogang, in Salzburg; and also in Peru.

Strophades; four small, rocky islands in the Mediterranean, west of the Peloponnesus; according to the ancient poets, the residence of the Harpies. The largest abounds in olives and other fruits, and produces a little corn, hardly sufficient for its few inhabitants; 26 miles south of Zante; lon. 21° 12′ E.; lat. 37° 29′ N.

Strophe (from the Greek στροφη, from στρεφω, I turn); a systematic union of several verses. According to the prevailing metre in the verses, strophes are called *alcaic*, *Asclepiadæan*, &c. The dithyrambus with the Greeks was confined to no precise rhythm, and rolled along without any division into strophes But the hymns and choruses, with which the tragedies were interspersed, consisted mostly of long strophes and antistrophes, of uniform measure, with which, also, sometimes alternated pro-odes, mesodes, or epodes, of various measure. The single verses of such poems, considered as mere members of strophes, were called *cola*. As the length of the verses is determined by the number of feet, so the length of strophes is determined by the number of cola. *Monocola* are lyric poems, in which verse of a uniform character is used, without division into strophes. *Dicola* are poems in which the strophes contain verses of but two different kinds. Sometimes these verses interchange in equal number: sometimes two or three verses of the same kind are followed by one of a shorter measure. So there are *tricola*, *tetracola*, &c. The system of strophes, antistrophes, &c., appears to be most developed in the dramatic choruses of the Greeks. The singing of the strophes on the stage, was accompanied with a motion or turn from right to left, towards the images of the gods placed on the sides of the orchestra (in the ancient sense of this word); but the singing of the antistrophe, with a contrary motion, from the left to the right; hence the appellations of *strophe* and *antistrophe*, which seem to have been given to these performances of the dramatic chorus alone, as *ode* and *antode* were applied to the song, unaccompanied with mimic representations. The chorus, originally consisting of fifty persons, but, by degrees, reduced to fifteen, was sometimes divided, for the purpose of singing the strophe and antistrophe, into two semi-choruses. In the epode, these were again united. The motions were those of a rhythmic dance, and therefore accompanied by flutes, by which the movement of the verse and that of the dancers were made to harmonize, as appears from the circumstance that the leader of the chorus beat, or indicated time, with shoes, the soles of which were covered with iron.

Strozzi, Philip, a celebrated Florentine patriot, one of the richest citizens of Florence in the early part of the sixteenth century, was allied by marriage with the Medici, but was too much attached to the ancient republican constitution to acquiesce in the domination of that house. When the sovereignty was assumed by Alessandro de' Medici, he joined the party which aimed at restoring a free government. Their application for support, to the emperor Charles V, being unattended to, Strozzi induced Lorenzo de' Medici to assassinate the duke. The only result of this action was the immediate succession of Cosmo, whom he opposed at the head of a body of troops; but, being defeated at the battle of Marona, he was made prisoner. Apprehending that he should be put to the torture, to force a disclosure of his accomplices, he anticipated the trial by a voluntary death, with a poniard. Having first traced, with the point of it, the line from Virgil—*Exoriare aliquis nostris ex ossibus ultor!* he pierced his breast, and immediately expired (1538).

Struensee and Brandt. John Frederic, count of Struensee, born at Halle, in 1737, after having completed his medical studies, entered upon the practice of physic at Altona, where he formed an acquaintance with the count of Rantzau-Aschberg and Brandt. In 1768, he received the appointment of physician to Christian VII, king of Denmark, whom he accompanied on his travels through Germany, England and France. After Christian's marriage with Caroline Matilda (q. v.), a coolness arose between the royal pair, of which the queen-dowager took advantage to promote the interests of her son, Christian's half brother. The birth of a crown prince, the present king of Denmark (see *Frederic VI*), widened the breach between Caroline and the queen-dowager, without reconciling Christian to his wife. The nation was divided into two great parties—that of the king, at the head of which was the young count Holk, the royal favorite, and that of the queen-dowager, at Friedensburg. Caroline Matilda aimed at effecting the removal of Holk, with the hope of regaining the king's favor, while Holk endeavored to increase the distance between her and the king. Thinking Struensee to be as warmly opposed to the queen as he was himself, he advised Christian to employ him in his messages to the queen. But this proved the ruin of Holk: the king became more and more attached to Struensee, and the queen, who observed the change, and contrasted the respectful deportment of Struensee with the arrogance of the favorite, soon admitted him to her confidence; and he effected a reconciliation between her and the king. Struensee now pursued his ambitious plans with redoubled zeal. Bernstorf (q. v.) was removed; Brandt succeeded Holk as director of the theatre and *maître des plaisirs*, and the friends of the queen were brought into office. To secure his influence, Struensee endeavored to occupy the king with amusements, and particularly to prevent him from communicating directly with his ministers. In 1770, at the instigation of Struensee, the king abolished the council of state, establishing, in place of it, a committee of conference, consisting of the heads of the different departments of the administration, who were only occasionally assembled, and had neither rank nor influence. This measure threw all authority into the hands of the queen and the favorite, and roused the indignation of the Danish nobility, which had enjoyed a seat and vote in the council. Struensee next procured the removal of the old ministers; and all affairs were now administered in the name of the king, by his personal attendants. But the favorite had neither prudence nor firmness to support him in this situation. He became overbearing and impatient of contradiction, and his attempts to introduce reformations in the finances, the army, law, &c., raised him up many enemies. He now caused himself to be created count, and, not satisfied with this, procured the dignity of cabinet-minister, with such powers as no Danish minister had ever before possessed. When his enemies attempted to expose his usurpations, the freedom of the press, which he had himself introduced, was subjected to restrictions. But the friends of Struensee were already becoming indisposed towards him, and the people began to show symptoms of dissatisfaction. Struensee was conscious of his danger, and took some precautions to defend himself. But on the night of Jan. 16, 1772, the queen, the favorite, Brandt, and their other partisans, were seized. The officer who commanded the guard (an old enemy of Struensee) had led his officers into the palace, declaring that the king had commanded him to arrest the queen. Count Rantzau-Aschberg then penetrated to the chamber of the king, waked him, and told him that his life was in danger, and that he must sign an order which the count presented to him. The feeble king obeyed, and the queen was conducted to Kronenburg. An extraordinary commission was instituted for the trial of Struensee, consisting in part of his personal enemies. The proceedings were pushed with severity; and, on the 25th of April, he was condemned to lose his right hand and his head, his body to be quartered and exposed upon the wheel, and his head and hand to be stuck upon a stake. When informed that the king had confirmed the sentence, he received the news with composure, and was executed on the 28th of April, 1772.—See Höst's *Count Struensee and his Ministry* (in Danish, 1824, and more complete in German, 1826), and *Mémoires de Falkenskiold* (Paris, 1826).

Strutt, Joseph, an English antiquary, born, in 1749, at Springfield, in Essex, was articled to an engraver, and obtained the gold and silver medals of the royal academy. He published, in 1773, his work entitled the Regal and Ecclesiastical Antiquities of England (4to.), containing representations of the English monarchs from Edward the Confessor to Henry VIII. This was followed by *Horda Angel Cynnan*, or a complete view of the manners, customs, arms, habits, &c., of the English from the arrival of the Saxons to the times of Henry VIII, &c. (1774, 1775 and 1776, 3 vols., with 157 plates). In 1777 and 1778, he published a Chronicle of England, which he meant to extend to six volumes, but dropped the design for want of encouragement. His Biographical Dictionary of Engravers appeared in 1785 and 1786, in two volumes, and his Complete View of the Dresses and Habits of the People of England, &c., in 1796 and 1799 (4to.). In 1801, he published his last and favorite work, entitled the Sports and Pastimes of the People of England (with forty plates, new octavo edition, with 140 plates, 1827). He died in London, in October, 1802, aged fifty-three. His modest character scarcely met, during his life-time, with the encouragement it deserved. He left some manuscripts, from which have since been published his Queen Hoo Hall, a romance, and Ancient Times, a drama (4 vols., 12mo.); also the Test of Guilt, or Traits of Ancient Superstition, a dramatic tale.

Strychnia; a vegetable alkali, found in the fruit of two species of the *strychnos*. It is obtained by the following process: The bean is rasped down as small as possible, and exposed to the action of nitric ether in a Papin's digester. What remains after the digestion is treated with alcohol, and the alcohol is evaporated to dryness, and the residue dissolved in water. To the aqueous solution potash is added, which throws down the strychnia in the form of a white crystalline precipitate. This alkali has also been extracted from the upas poison. The properties of strychnia, in a state of perfect purity, are as follows: It has a crystalline structure (often presenting four-sided prisms, terminated by four-sided pyramids), is of a white color, has an intolerably bitter taste, and leaves a metallic impression in the mouth; it is destitute of odor, and is not altered by exposure to the air; it is neither fusible nor volatile, except at temperatures at which it undergoes decomposition. It is very little soluble in cold water, 100,000 parts of that liquid dissolving only fifteen parts of the alkali; but it dissolves in 2500 times its weight of boiling water. When it is introduced into the stomach, it acts with prodigious energy. A locked jaw is induced in a very short time, and the animal is speedily destroyed. Half a grain of strychnia blown into the throat of a rabbit, proved fatal in five minutes, and brought on locked jaw in two minutes. A great variety of salts of this alkali may be obtained by treating it with the different acids, and by double decomposition.—Sulphate of strychnia crystallizes in cubes, and is soluble in less than ten times its weight of cold water. It consists of sulphuric acid 90.5 and strychnia 9.5. Muriate of strychnia crystallizes in very small needles, and is more soluble in water than the sulphate. Nitrate of strychnia acts with more violence upon animals than the pure alkali. Solutions of the salts of strychnia, when exposed to a heat of 212°, become volatile.

Strype, John, a voluminous contributor to English ecclesiastical history and biography, was born in 1643, and educated at St. Paul's school, whence, in 1661, he was removed to Jesus college, and afterwards to Catharine hall, Cambridge. He graduated M. A. in 1666, and, taking orders, was nominated to the perpetual curacy of Theydon Boys, in Essex. His works are, Ecclesiastical Monuments (in 3 vols., folio); Annals of the Reformation (4 vols., folio, 1709—1731); an augmented edition of Stow's Survey of London (in 2 vols., folio, 1720); and Lives of Cranmer, Parker, Grindal, Whitgift, sir John Cheke, sir Thomas Smith, and bishop Aylmer. He was for many years rector of Hackney, in which he spent the latter part of his life, which was prolonged to the age of ninety-four.

Stuart. The Stuart or Stewart family was descended from the great Anglo-Norman family of Fitz Alan, in England. The dignity of seneschal or steward of the king's household having become hereditary in a branch of this family, settled in Scotland, the title was converted into a surname. Walter, the sixth high steward, married Marjory, daughter of Robert (see *Bruce, Robert*); and, on the extinction of the male line of Bruce, Robert Stewart, their only son, ascended the Scottish throne (1371) under the title of Robert II. His grandson, James I (q. v.), was murdered in his bed, in 1437. His successors were James II, killed in a war with England (1460); James III, who fell in battle against his rebellious subjects (1488); James IV, who perished fighting against the English (1513); James V (q. v.), died of chagrin on account of the rebellion of his subjects. His last words were, on hearing of the birth of his daughter Mary, "God's will be done. It came with a lass; it will go with a lass,"—alluding to the crown, which had come into his family by marriage. That daughter (see *Mary Stuart*) perished on the scaffold, and her son James VI (I of England) united the crowns of England and Scotland (1603). James I, Charles I, Charles II, James II, Mary and Anne (see the articles) wore the double crown of the two kingdoms until 1714, 343 years from the period when the family ascended the Scottish throne, and 111 from the time of its accession to that of England. James II was deposed in 1688, and his son James Edward (see *Stuart, James Edward*), who styled himself James III, died in exile, after ineffectual attempts to regain the throne of his ancestors. James III's son, Charles Edward (see *Edward, Charles*), died childless, in 1788. His only brother, Henry, cardinal of York, died in 1807, and with him the house of Stuart became extinct.

Stuart, John; earl of Bute. (See *Bute.*)

Stuart, Arabella. (See *Arabella Stuart.*)

Stuart, James Edward Francis; the eldest son of James II, by his second wife, Mary of Modena, born in London, June 10, 1688. He was but five months old when his father was dethroned; and his mother, with her infant, fled to France, where Louis XIV afforded an asylum to the exiled family at St. Germains. (See *James II.*) An attempt was made at the peace of Ryswick, in 1697, to ensure the restoration of this young prince to the throne of his ancestors, which was defeated only by the opposition of his father—as William III had agreed to procure the recognition of the prince of Wales, as he was styled, as his successor; but James II rejected the proposal, observing that he could support with resignation the usurpation of his son-in-law, but he could not suffer his son to become a party to it. On the death of the ex-king, in 1701, Louis XIV recognised his son as king of England, by the title of James III, and a proclamation, in the name of the latter, was addressed to the English nation; but no effective measures were adopted in his favor. The death of William III (q. v.) revived the hopes of his party; but nothing beyond unavailing negotiation took place till 1708, when a maritime expedition against Scotland was fitted out, in which the prince embarked, under the command of the chevalier Forbin. This armament, however, being attacked by an English fleet of superior force, returned to France without landing the invading forces; and the young adventurer (who assumed the name of the chevalier de St. George) joined the French army in Flanders, and distinguished himself by his valor at the battle of Malplaquet. In the latter part of the reign of Anne, repeated intrigues were set on foot to secure the restoration of her brother, or his succession to the crown after her death; but they proved entirely abortive, and, on the treaty of Utrecht taking place, in 1713, he was obliged to submit to a temporary retirement from France; and when he returned to Paris, he resided there incognito. Had not the decease of queen Anne been speedily followed by that of Louis XIV, in 1715, the invasion of Scotland by the Pretender, as he was called, might have led to a very different result from that which actually took place. (See *Anne*.) The regent duke of Orleans wished to maintain peace with George I, and the British ambassador at Paris was informed of the projects of the chevalier de St. George by the abbé Strickland, one of his agents, who betrayed his confidence. The earl of Mar, in Scotland, raised the standard of revolt against the house of Hanover, proclaiming the heir of the Stuarts king, under the title of James III; and the latter, embarking at Dunkirk, made a descent on the Scottish coasts; but he soon perceived that success was hopeless, and was obliged to return to France. Even that kingdom no longer yielded him an asylum, and he was forced to remove, first to Avignon, and then to Rome. In consequence of the disputes which occurred between the duke of Orleans and cardinal Alberoni, the prince was, a few years after, invited to Spain, where he was well received by Philip V; but the visit had no important influence on his affairs, and Rome again became his retreat, as it was his future residence. In 1720, he married the princess Mary Casimira Sobieska, grand-daughter of the famous John Sobieski, king of Poland. This union was not attended with domestic happiness, and a separation between the husband and wife was with difficulty prevented by the interference of cardinal Alberoni, then a resident at Rome. He took no active part in the expedition against Scotland, under his son, in 1745; and the latter part of his life was dedicated to exercises of piety. He died Jan. 2, 1766.

Stuart, Charles Edward. (See *Edward, Charles*.)

Stuart, Henry Benedict Maria Clement, cardinal of York, younger son of James Edward, and the last descendant of the royal line of the Stuarts, was born at Rome, in 1725, and, being destined for the church, the pope bestowed on him the right to hold benefices without receiving the ecclesiastical tonsure. In 1745, when the last effort was made for the restoration of his family, he assumed the command of troops assembled at Dunkirk, to aid the operations of his brother in Great Britain; but the news of the battle of Culloden prevented the embarkation of this armament, and prince Henry returned to Rome. The visions of regal splendor, in which he might have indulged, being thus dissipated, he took holy orders, and, in 1747, pope Benedict XIV raised him to the purple. He was subsequently made chancellor of the basilica of St. Peter, and bishop of Frascati. On the death of his brother, in 1788, he assumed the barren title to which the family had aspired, and caused a medal to be struck, with the inscription, *Henricus Nonus Angliæ Rex*, and on the obverse, *Gratia Dei, non Voluntate Hominum*. When the French conquered Italy, he was obliged to flee to Venice, and was indebted for his support to a pension from the English court. His death took place in 1807. The valuable papers of his grandfather and his father, which had remained in his possession, were, after his decease, sent to England.

Stuart, doctor Gilbert, an eminent historical writer, born at Edinburgh, in 1742, was educated in the university of that city, where his father was professor of humanity, and was destined for the legal profession, which he relinquished for that of an author. In 1767, he published an Historical Dissertation concerning the Antiquity of the British Constitution, the merit of which procured him the degree of LL. D. This was followed, a few years after, by his View of Society in Europe, in its Progress from Rudeness to Refinement. Being disappointed in an attempt to obtain the professorship of public law in the university of Edinburgh, he removed to London; and, from 1768 to 1774, he was a contributor to the Monthly Review. He then returned to his native city, and established the Edinburgh Magazine and Review; but his illiberal and virulent criticisms ruined the credit of the work, which was discontinued in 1776. About this time, he published his Observations concerning the Public Law and Constitutional History of Scotland (8vo.); the History of the Reformation in Scotland (1780, 4to.); and the History of Scotland (1782, 2 vols.). In the year last mentioned, he again repaired to London, and engaged as a writer; but habits of intemperance had undermined his constitution, and he once more returned to his native place, where he died in 1786. His works display erudition, industry and sound judgment, wherever the latter quality is not influenced by his jealousy and hatred of contemporary writers.

Stuart, James; a distinguished antiquary and architectural draughtsman, born in London, in 1713. His father having died when he was young, he assisted his mother by practising fan-painting. Prompted by his inclination, he studied anatomy, geometry, and other branches of science; and, having, by his industry, provided for the support of his younger brother and sister, set out, with a very small supply of money, for Rome. He supported himself during his travels by the exercise of his talents, and at Rome made acquaintance with Nicholas Revett, a skilful architect, with whom he went to Athens, in 1751. Here they remained till the latter part of 1753, making drawings and taking measurements of architectural relics. After visiting Salonica, Smyrna, and some of the Ægean islands, they returned to England, in the beginning of 1755. The result of their labors appeared in the work entitled the Antiquities of Athens (1st vol. 1762, folio; 4th vol. 1816). A new and improved edition of this valuable work has recently been published. Stuart died in 1788.

Stucco (*Italian*) in architecture; a composition of white marble pulverized and mixed with plaster of lime, which, being sifted and wrought up with water, is used like common plaster. Architectural and sculptural ornaments, such as fruits, flowers, garlands, festoons, &c., are made of it. In the interior of buildings, stucco work is generally applied to the ceilings of apartments, the mouldings, &c. On the exterior, it should be confined to those parts which are not much exposed to the rain. In some countries, a stucco of common mortar and of plaster is applied to the outside of houses, and is extremely durable. Vitruvius seems to mention stucco in the second, third and sixth chapters of the seventh book, under the name of *opus albarium*, or *opus coronarium*. Immediately after the stucco is mixed, it forms a very soft and ductile paste, which, however, soon hardens, and then the desired form is given to it with moulds or with a little spatula of iron. During this operation, it continues to harden, and may even be cut; and at this period, those parts of the ornaments are executed which demand a nice finish. In a few days, it acquires the consistence of dry clay, and ultimately becomes hard like stone, and takes a beautiful polish.

Studding-Sails; certain sails extended, in moderate and steady breezes, beyond the skirts of the principal sails, where they appear as wings to the yard-arms. The top-mast and top-gallant studding-sails are those which are set on the outside of the top-sails and top-gallant sails.

Studies. (See *Drawing*.)

Stuff, in commerce, is a general name for all kinds of fabrics of gold, silver, silk, wool, hair, cotton, or thread, manufactured on the loom; of which number are velvets, brocades, mohair, taffeties, cloth, serges, &c. The term is also used more particularly to denote slight woollen articles used principally for linings and women's apparel.

Stuhlweissenburg; or, in Hungarian, **Szekes Fejervar**; in Sclavonic, **Bieligrad**; a royal free town of Hungary, capital of a county of the same name, thirty miles south-west of Buda; lon. 18° 25′ E.; lat. 47° 12′ N.; population, 12,244. It was built in the eleventh century, and, during five centuries, was the place where the kings of Hungary were crowned, and on that account called *Alba Regalis*. It is now declined from its former importance, and has a mean appearance, though it contains some good buildings. It has a Catholic gymnasium and some manufactures.

Stum, in the wine trade, is a name for the unfermented juice of the grape, when it has been several times racked off and separated from the sediment. The casks are, for this purpose, well fumigated with brimstone, in order to prevent fermentation, through which the juice would become wine.

Sturdy, Staggers, Gid, Turnsick, Goggles, Worm under the Horn, Watery Head, and **Pendro**, are all popular names for hydatids, caused by an animal now known as the *tænias globulus*, which, by some unaccountable way, finds entrance into the brain of the sheep, and settles there, either in some of its ventricles, or more frequently in its substance. Their size varies from that of the smallest speck to that of a pigeon's egg; and the sheep attacked are generally under two years old. These animals are likewise occasionally found in all the natural cavities of the body. Stupidity, a disposition to sit on the rump, to turn to one side, &c., are the indications of this disease, which is not incurable, as has been supposed, but can be cured only by a manual operation—instruments are thrust through the skin and skull, or a wire through the nostrils, and the hydatid thus destroyed. The latter is called by the English shepherds *wiring*. It is always fatal, if not relieved by art.

Sturgeon (*acipenser*). A genus of cartilaginous fishes, allied somewhat to the shark and ray, but differing essentially in structure, as well as in the habits of the species. The mouth is situated beneath the snout, is small, retractile, and destitute of teeth; there are several fleshy beards also beneath the snout, and anterior to the mouth; the body is massive, elongated, and furnished with several longitudinal rows of bony plates implanted in the skin; the gill openings are very large. The sturgeons inhabit the ocean, Mediterranean, Red, Black, and Caspian seas, and the Canadian lakes, keeping in inaccessible depths during the winter season, and in the spring ascending the larger rivers. The common sturgeon of Europe (*A. sturio*) is found in most of the large rivers of that continent, and sometimes is excessively multiplied in the more northern countries. Its flesh is delicate and well flavored, somewhat resembling veal, and has been esteemed in all ages; but modern nations do not consider it so great a luxury as the ancients, especially the Romans. Its fishery is an object of importance, and caviar is sometimes made of the eggs of the female.—The isinglass sturgeon, or *beluga* of the Russians (*A. huso*), is the largest species. It is not so extensively diffused as the former, and is chiefly found in the Black and Caspian seas, ascending the tributary streams in immense multitudes. It frequently attains the length of twenty or twenty-five feet; and individuals have been taken weighing nearly three thousand pounds. It enters the rivers in the middle of winter, while they are still covered with ice, is very voracious, and pursues all the smaller fishes, but feeds likewise on vegetables. The fishery of this species is vastly important in the south of Russia; and upwards of a hundred thousand are taken yearly. The caviar of commerce is chiefly made from its eggs, which exist in such abundance as to constitute nearly one third of the total weight. This is a very common aliment in Turkey, Russia, Germany, Italy, and especially in Greece, and forms an important article of commerce, very profitable to Russia. The flesh is white, fat, resembling veal, very wholesome, nutritious, and agreeably tasted. The isinglass of commerce is prepared from the air bladder. The fat is also agreeable to the taste, and may be used as a substitute for butter or oil. A kind of leather is made from the skin, and that of the young ones, cleaned and dried, is used for window-glass in some parts of Russia and Tartary. There are a few other species of sturgeon in the rivers of Europe. We have several sturgeons in the U. States, but their useful properties appear to be not yet fully appreciated: it is probable that, at some future day, they may become important, though not to the same extent as the European.—The common round-nosed sturgeon of the Delaware and Hudson is the largest, attaining the length of ten feet During the hot season, it is fond of leaping out of the water, forming a familiar and interesting spectacle. It is very troublesome to the shad fishermen, sometimes breaking their nets when enclosed. It is sometimes brought to the Philadelphia market; but the majority that are taken in the Delaware are left to rot along the shores. The short-nosed sturgeon (*A. brevirostrum* of Lesueur) is a small species, remarkable for the shortness of the head in proportion to its breadth. It grows to the length of about three feet, and inhabits the Delaware, but is rather rare. When taken, it is brought to the Philadelphia market, and commands a higher price than the large one; but it is eaten by the common people only.—The sharp-nosed sturgeon (*A. oxyrhynchus*) of Mitchell, distinguished by its long and somewhat acute snout, grows to the length of four feet and upwards. The skin is rough. It is found in the Delaware, but not so abundantly as in the Hudson. Probably this is the species which inhabits the Merrimack and the rivers of Maine. *A. rubicundus* (Les.) inhabits lakes Erie, Ontario, Huron, and Michigan. It grows to the length of four feet or more. The color is red, inclining to yellowish on the back, and to olivaceous on the sides. The Indians use it for food, and take it by means of a harpoon or dart, having a long line attached, in order to enable them to play the animal till exhausted. It is not sought after for the table, but, when taken by the fishermen in their seines, is occasionally salted down, as a substitute for more esteemed food. Travellers assert that it is good, palatable food. The same, or a variety, is found in the Ohio. *A. maculosus* (Les.) is a small species of a reddish olive color, with black spots, found in the Ohio.

Sturlason, Snorro, a native of Iceland, of an old noble family, was born in 1179. He lived for a long time at the courts of Norway and Sweden, was at last *lagmann* of Iceland, and was murdered in 1241, in his castle. He was a man of great talents, and rendered himself famous as a poet, lawgiver, zealous republican, and historian. He composed a general history of the north, from the ancient songs of the scalds, and other historical sources, with taste, and a faithful use of his sources. His history is rich in information respecting Sweden and Iceland, somewhat less so in regard to Norway, and affords some notices respecting Russia. Its title is *Heimskringla* (i. e. *Orbis Terrarum*), *edr. Noregs Konunga Soegor seu Historiæ Regum Septentrionalium a Snorrone Sturlonide conscriptæ*, edited by John Peringskiœld (Stockholm, 1697). A new edition, enlarged and corrected by G. Schöning and S. Th. Thorlacius, appeared in 3 vols., folio, at Copenhagen (1777—82). The continuation by Sturla Thoraldson (of Norway), and an unknown writer, is to be found in Christian Jakobi's *Norvegia Monarchica et Christiana* (Glückstadt, 1712, 4to.). (See our article *Scandinavian Literature.*) A long account of Snorro Sturlason is to be found in Wheaton's History of the Northmen, page 98 et seq. of the American edition.

Stuttering, Stammering, or Hesitation of Speech, are terms implying an interrupted articulation, accompanied generally with more or less of straining and distortion of feature. If owing to a vicious conformation of the tongue, or other organ of speech, it is incurable; but when merely spasmodic, the cure is possible, and sometimes easy. In some cases, stuttering is relievable at once, by avoiding carefully the usual hurried repetition of the same syllable, or by opening the mouth, and allowing simple sound to pass, when any one oral position threatens to become spasmodically permanent. Should it arise from the attempt to speak being made while drawing in the breath, it may be avoided by filling the chest well before beginning to speak. A scale of articulate sounds, or table of articulations, with minute directions as to the proper position of the organs in producing the different sounds, may, likewise, in some instances, prove useful to the patient.

Stuttgard, or **Stuttgart**; capital of the kingdom of Würtemberg, on the small river Nesenbach; lon. 9° 11′ E.; lat. 48° 46′ N.; thirty-five miles southeast of Carlsruhe, one hundred and sixteen north-west of Münich; population in 1827, 22,000; with the military and strangers, 31,330. It is situated in a valley, two miles from the Neckar, and is divided into three parts, the town proper, two suburbs adjacent to each other, and a separate suburb, called Esslingen. The town proper is badly built, the streets being narrow, and the houses frequently of wood: the suburbs have a better appearance, particularly that of Esslingen, which contains the royal palace, gymnasium, barracks, and other public buildings. The palace is a noble structure, situated near an extensive park, and contains a good collection of paintings, statues, &c. The royal library contains 200,000 volumes, including 12,000 copies of the Bible of different editions. The town has a public library, an old palace, mint, town house, great church, and royal stables. Though surrounded by a wall and ditch, Stuttgard is a place of no strength. The manufactures are on a small scale; the expenditures of the court and nobility forming the chief support of the inhabitants. The surrounding country is fertile and delightful, consisting of eminences covered with vineyards, and valleys laid out in corn-fields. The Solitude, near Stuttgard, is a beautiful country residence of the sovereign.

Stye (*hordeolum*); a little tumor on the eyelids, resembling a barley-corn. The stye is strictly only a little bile, which projects from the edge of the eyelids, mostly near the great angle of the eye. This little tumor is of a dark red color, much inflamed, and a great deal more painful than might be expected, considering its small size. The latter circumstance is partly owing to the vehemence of the inflammation producing the stye, and partly to the exquisite sensibility and tension of the skin, which covers the edge of the eyelids. On this account, the *hordeolum* very often excites fever and restlessness in delicate, irritable constitutions: it suppurates slowly and imperfectly; and, when suppurated, has no tendency to burst. The stye forms an exception to the general rule, that the best mode in which inflammatory swellings can end, is resolution; for, whenever it extends so deeply as to destroy any of the cellular substance, the little tumor can never be resolved, or only imperfectly so. This event, indeed, would rather be hurtful, since there would still remain behind a greater or smaller portion of dead cellular membrane, which, sooner or later, might bring on a renewal of the stye, in the same place as before, or else become converted into a hard, indolent body, deforming the edge of the eyelid.

Style, from στυλος, originally the instrument with which the ancients wrote on hard substances, came afterwards to signify the peculiar way of expressing a thought or idea in language or form. Thought strives for manifestation. Its most effectual instrument is language. The object of language is to give an accurate picture of the thoughts of the speaker to the person addressed. Hence it must vary with the character of the persons spoken to. It should always, however, be the natural product of a man's own mind; and when thoughts are fully matured, they can be easily expressed by one who has the riches of a cultivated language at his command. A style of expression which betrays the effect of imitation is always disagreeable; and the more so the more perfect is the imitation. It is body without spirit, the covering of the pupa without the butterfly within. The study of the style of others can be of advantage only as it shows the connexion between their thoughts and their manner of expression. The first requisite of a good style is clear and independent thought. Some have even considered it the only thing necessary; but this is going too far. There is a certain mechanical skill required, to find the best expression of a thought in a language which is the common means of communication among millions of people, all differing in character and circumstances; and it would be mere loss of time for every one to attempt to acquire this by his own experience, for which he may not have a good opportunity; but, unless it is acquired, even the most highly gifted intellects can produce but an imperfect effect. This circumstance, that we speak and write for others; that our expression, as far as regards ourselves, is the effect of thought, whilst, as respects others, it is intended to become the cause of thought, —is, perhaps, the chief reason for studying style. Still, however, we must repeat, that the most important means for becoming clear to others, is to be clear to ourselves. To excel in writing or speaking, as to excel in music, painting, architecture, mathematics, &c., original talent is the first thing necessary; yet study is indispensable, and without it, hardly any progress could be made in the various branches of human activity. The collected experience of many furnishes principles for a theory of style as well as of every art; but this theory will be of advantage only to him who has the main requisites of clear and just thought. One of the best general rules of style is to be as brief as perspicuity allows; though there are some exceptions, particularly in the case of public speaking, in which it is often necessary to dwell long on important ideas, in order to afford the hearer time to comprehend them fully. In writing, there are very few exceptions to the rule. Logical correctness of thought, though essential to a good style, does not need to be particularly treated of in discussing the theory of style. It falls properly under the head of a disquisition on logic. Beauty of style consists in harmonious expression, an easy flow, and a happy connexion of ideas; in the avoidance of every thing which can offend good taste and decorum; in the use of imagery fitted to strike and gratify the imagination, &c. The two chief branches of style are those of prose and poetry. (See these articles.) The ancient rhetoricians speak of a *genus dicendi tenue, medium, et sublime*, or a lower, middle, and higher style. No work, however, necessarily falls, from beginning to end, under either of these heads. Style must sink or rise with the thoughts and feelings expressed. The various relations of life, and the various modes and subjects of communication, render the division of prose into various kinds of style necessary. Thus we have the didactic style, the style of business, the epistolary, the historical style, and the various oratorical styles. Style began early to be cultivated. Among the Greeks, who, however, confined themselves almost entirely to oratorical expression, Aristotle, Demetrius Phalereus, Dionysius of Halicarnassus, Hermogenes, and Longinus; among the Romans, Cicero and Quinctilian, are the principal writers on style.

Style, in the arts. Style, or mode of representation, in the arts, depends on the character of the artist, the subjects, the art itself, the materials used, the object aimed at, &c. The style varies in different periods: thus we have the ante-Greek, or old Oriental style, in which the powerful and colossal prevails; the classical or antique style of the Greeks and Romans (see *Antique*), and the style of Christian art (the romantic or modern style). It is influenced by differences of national character. Thus we have a German, Italian, French, and English style or school. The effect of the national character is particularly apparent in certain arts, e. g. painting or music. The national style also has its periods; at one time aims particularly at the sublime or great, at other times strives after the beautiful, the pleasing and graceful; as Winckelmann has observed in respect to the Greek plastic art. The style varies, too, with the character of the individual. Here we must distinguish between the style which proceeds from the nature of the subjects to which the genius of the artist inclines him, and his mode of representing those subjects. The latter is called more particularly *manner*. The manner of an artist may be noble or petty, strong or weak; but it is always uniform, and in a certain degree arbitrary, while the style, in its proper sense, is not. The style of great artists continues in their schools, and there usually degenerates into manner. The word *style* is also applied to the different modes of representation, occasioned by the different nature of the various arts: thus there is an architectural, a plastic, a picturesque style. The various branches of an art, too, have each its peculiar style; e. g. in poetry, there are the epic, lyric, dramatic styles; in music, the sacred, opera, concert styles, the vocal and instrumental styles, the quartetto, sonata, symphony styles, &c.; in painting, there are the historical, landscape, &c. styles.

Style, Old and New. (See *Calendar*, and *Epoch*.)

Styles of Architecture. (See *Architecture*, vol. i, page 339.)

Stylites (from στῦλος, column; in Latin, *sancti columnares*). The most singular saints of the Christian church were anchorites (q. v.), who, by way of penance, passed the greater part of their lives on the top of high columns. Simeon, a Syrian monk, of the fifth century, invented this insane method of self-torture, about 423. He lived, for nine years, on a column, the top of which was only two ells in circumference, in the open air, near Antioch, afterwards changed it for a higher one, and at length for one forty cubits, and only three feet in diameter at top; when he slept, he leaned against a sort of balustrade. On this pillar he remained twenty-eight years, till his death, in 459 or 460. The whole time which he passed on the top of pillars, was about thirty-seven years. It appears, however, that he must have descended at times, since he cured the sick by his touch, and performed sundry other miracles; wrote epistles, and took part in political quarrels. The example of this strange being, who was canonized after his death, was imitated by many persons in Syria and Palestine; and the mania continued until the 12th century. The *Dictionnaire de Théologie*, a modern Catholic work, chiefly in defence of the Roman church, has a long article *Stylite*, vindicating St. Simeon, as an instrument in the hands of the Creator, for the conversion of the heathen. "Shall we refuse to God," says the writer, "the liberty of attaching the grace of conversion to such means as he may choose?" The article also relates the miracles of St. Simeon.

Stymphalides, in mythology; certain birds of prey, which derived their name from the town or the lake of Stymphalus, in Arcadia, near which they lived; or from an ancient hero Stymphalus, whose daughters they were considered to be. They were large birds, with iron wings, beaks and claws, of the size of cranes, in form similar to the ibis, but having straight beaks. They could shoot their feathers like arrows, and thus kill men and beasts. (See *Argonauts*.) Eurystheus imposed on Hercules the task of driving them from the place of their abode, in which he succeeded.

Stymphalus. (See *Stymphalides*.

Styptic; a remedy that has the virtue of stopping blood, or of closing the aperture of a wounded vessel. Many waters and powders are of this nature; but in most of them vitriol is the chief ingredient.

Styria. (See *Stiria*.)

Styx; a nymph, according to Hesiod, the daughter of Oceanus and Thetis, according to others, of Erebus and Night. By Pallas, she became the mother of Zelos and Cratos, Nike and Bia (Zeal, Power, Victory and Strength); according to Pausanias, she bore the Hydra to a certain Piras; and, according to Apollodorus, Proserpine to Jupiter. Her children, by Pallas (according to Hesiod), enjoyed the honor of living with Jupiter, and of being inseparably connected with him, because they and their mother assisted him in the war with the Titans. In honor of Styx herself, it was provided, that the gods should swear by her. According to another passage of Hesiod, Styx lived with her children in the region of Tartarus, in a palace of rocks, separated from the dwellings of the other deities residing there, or in a grotto resting on columns. From this rock issued a cold stream, which flowed far under the earth unseen. It was the tenth arm of Ocean. Nine of them flowed around the earth, and the sea, and then emptied into the tenth, which (the Styx) descended to the lower regions, where it formed the celebrated Stygian pool. By this the gods swore; and if any god violated his oath, he was banished from Olympus, stretched out lifeless, and became overgrown with mould. In this state he remained a year; after which, he suffered other torments for nine years, and, during this period, was excluded from the society of the gods. Styx was originally a rivulet in Arcadia, springing from a high rock, near the town of Nonacris. Its water was considered poisonous to men and beasts: metals were corroded, and vessels burst to pieces by it.

Suabia, or **Swabia** (in German, *Schwaben*); one of the ten circles into which the German empire was divided, previous to its dissolution in 1806. It lay in the south-western part of Germany, comprising some of the most fertile and beautiful parts of the country, traversed from south-west to north-east by the Danube. The Black Forest (q. v.), or Schwarzwald, intersects the western part of the country, and the Suabian Alps (see *Alps, Suabian*) stretch through the interior. The circle of Suabia, comprising 13,150 square miles, with 2,200,000 inhabitants, was surrounded by France, Switzerland, the Austrian territories, Bavaria, Franconia, and the circles of the Rhine. The soil is fertile, the face of the country mountainous. The circle comprised the sovereign bishoprics of Augsburg and Constance, the princely provostship of Elwangen, and the princely abbey of Kempten; the abbeys of Salmansweiler, Weingarten, Ochsenhausen, Elchingen, Irsee, Ursperg, Kaisersheim, Roggenburg, Roth, Weissenau, Schussenried, Marchthal, Petershausen, Wettenhausen, Zweifalten and Gengenbach, Neresheim, Heggbach, Guttenzell, Rothmünster, Baindt, Söflingen, Isni, Lindau and Buchau; the duchy of Würtemberg; the margraviate of Baden; the principalities of Hohenzollern and Lichtenstein; the landgraviates of Klettgau, Stühlingen and Baar; the Teutonic commandery of Alschhausen; the counties (*grafschaft*) of Thengen, Heiligenberg, Œttingen, Friedberg-Scheer, Königsegg, Eberstein, Hohenems, Bondorf, Hohengeroldseck; the lands of the counts Fugger; the county and lordships of Truchsess of Waldburg; the lordships of Trochtelfingen, Juugnau, Wiesensteig, Hausen, Möskirch, Tetnang, with Argen, Mindelheim, Schwabeck, Gundelfingen, Justingen, Eglof, Tannhausen and Burg, with Neusickingen, and the thirty-one imperial free cities of Augsburg, Ulm, Esslingen, Reutlingen, Nördlingen, Hall, Ueberlingen, Rotweil, Heilbronu, Gemünd, Memmingen, Lindau, Dünkelsbühl, Biberach, Ravensburg, Kempten, Kaufbeuern, Weil, Wangen, Isny, Leutkirch, Wimpfen, Giengen, Pfullendorf, Buchhorn, Aalen, Bopfingen, Buchau, Offenburg, Gengenbach, Zell on the Hammersbach. Of these numerous sovereignties, the possessions of the Würtemberg, Baden and Fürstenberg houses were the most extensive. Würtemberg, Baden, the two Hohenzollern lines, and Lichtenstein, are the only ones that have not been mediatized. (See *Mediatization*.) The diets of the circle were commonly held at Ulm, and in time of peace twice a year. *Austrian Suabia* was composed of the hereditary states of the house of Hapsburg, comprising Burgau, Nellenburg, the prefectorate of Suabia, Hohenberg, the Brisgau, Ortenau, and some towns and convents, containing in all a population of about 170,000; but these have been renounced or exchanged. The kingdom of Würtemberg and the grand duchy of Baden comprise at present the greater part of Suabia. The kingdom of Bavaria includes a part on the east side; and other portions are subject to the princes of Hohenzollern and Lichtenstein. (See Pfister's *History of Suabia*, and Leichtlen's *Suabia under the Romans* (both in German). (See also our articles *Germany*, and *Hohenstaufen*.)

Suabian Alps. (See *Alps, Suabian*.)

Suabian Poets. (See *Minnesingers*.)

Suada, or **Suadela**; with the Greeks, Peitho, the goddess of persuasion, whose worship Theseus is said to have established at Athens, in memory of the union of the scattered population of Attica into one state. A statue of this goddess, made by Praxiteles, stood in Athens, in the temple of Aphrodite (Venus). She was represented as belonging, with the Graces, to the company of Venus. Some make Suada herself one of the Graces.

Suard, Jean Baptiste Anthony, a French miscellaneous writer, born at Besançon, in 1733, was the editor of the *Journal de Paris*. During the revolution, he conducted a publication entitled *Nouvelles Politiques*, which, professing to oppose democracy, was suppressed, and he was forced to quit France. When Bonaparte was first consul, he returned, and became member of the legion of honor, and of the national institute, and perpetual secretary of the class of French literature. He then established a journal called the *Publiciste*, which was soon given up for the *Archives Littéraires*, and the *Opuscules Philosophiques*. Suard was familiar with English literature, and translated Robertson's Charles V, and History of America, with several other English works. Many of the notices of Englishmen in the *Biographie Universelle* are from his pen. See Garat's *Mémoires historiques sur Suard* (1820). He died at Paris in 1817.

Subhastatio, in the civil law, is the public sale of immovable property, to the highest bidder, as auction, in that law, is the sale of *mobilia*, or personal property. The *jus primi liciti* in some countries, allows the first bidder at an auction sale to take the article at the highest price bid; but he must declare his intention before the hammer falls. The name *subhastatio* originated from the Roman usage of planting a spear (*hasta*) on the spot where a public sale was to take place.

SUBJECT, in philosophy. (See *Object.*) In ethics, *subject* often designates a free agent, in contradistinction to things inanimate. In music, the theme of a fugue is called *subject.* In politics, all the people who owe allegiance to a monarch, have been heretofore called the monarch's *subjects*, even when his authority rested on a contract with the people, and his power was limited. But the French seem unwilling to allow this name to be applied to them since the revolution of 1830. The use of the word in this application, by the minister Montalivet, in the session of January 4, 1832, caused much excitement in the chamber of deputies, and ministers have since avoided it. Those persons who are under the sway of a republic, without participating in all the rights of those in whom the sovereignty rests, are also called *subjects.* Thus Hamburg calls the inhabitants of Ritzebüttel *subjects.*

SUBJECTIVE, and SUBJECTIVITY. (See *Object.*)

SUBLIMATE, CORROSIVE. (See *Mercury*, vol. viii, p. 421.)

SUBLIMATION; a process by which volatile substances are raised by heat, and again condensed in a solid form. This chemical process differs from evaporation only in being confined to solid substances. It is usually performed either for the purpose of purifying certain substances, and disengaging them from extraneous matters, or else to reduce them into vapor, and combine them under that form. As all fluids are volatilized by heat, and consequently capable of being separated, in most cases, from fixed matters, so various solid bodies are subjected to a similar treatment. Fluids are said to *distil*, and solids to *sublime*, though sometimes both are obtained in one and the same operation. If the subliming matter concretes into a solid, hard mass, it is commonly called a *sublimate;* if into a powdery form, *flowers.* The principal subjects of this operation are, volatile alkaline salts; neutral salts, composed of volatile alkali and acids, as sal ammoniac; the salt of amber, and flowers of benzoin, mercurial preparations, and sulphur. Bodies of themselves not volatile, are frequently made to sublime by the mixture of volatile ones; thus iron is carried over by sal ammoniac, in the preparation of the *flores martiales*, or *ferrum ammoniatum.* The fumes of solid bodies in close vessels rise but a little way, and adhere to that part of the vessel where they concrete.

SUBLIME PORTE. (See *Turkey.*)

SUBORNATION OF PERJURY. (See *Perjury.*)

SUBSIDIES. With the Romans, the third line of troops (*corps de reserve*), which, in case of necessity, assisted the two first, was called *subsidium.* Hence *subsidiary* is used in the sense of *auxiliary.* The substantive *subsidy* is used to denote the pecuniary assistance afforded, according to treaty, by one government to another, sometimes to secure its neutrality, but more frequently in consideration of its furnishing a certain number of troops. *Subsidies*, or *supplies*, in England, also denotes the money granted by parliament to the government.

SUBSTANCE (*substantia*), in a philosophical sense, is contradistinguished to *accident*, and signifies that which exists independently and unchangeably; whilst *accident* denotes the changeable phenomena in substance, whether these phenomena are necessary or casual, in which latter case they are called *accidents*, in a narrower sense. The relation of accident to substance is called the relation of inherence, and corresponds to the logical relation of subject and predicate; because the substance is the subject, to which are assigned the qualities, states and relations as predicates: substance itself is the essence, which is capable of these phenomena, and, in spite of these changes, remains the same. Some schoolmen gave the name of substance to that in which exists our ideal of perfection; others to a thing which exists through itself and for itself. Leibnitz calls *substance* that which contains in itself the cause of its changes. In natural science and in common life, *substance* is used to designate material beings, especially simple, inorganic bodies, and the fundamental constituents of organic bodies; e. g. a liquid *substance.* But every substance which falls within the scope of our observation, if we understand by *substance* that which is unchangeable in its phenomena, is only a relative one; i. e. is such only in respect to some others, and is not unconditionally independent, but must be conceived dependent upon one original cause of things. In contradistinction to the *relative* substance, therefore, we speak of *absolute* substance, as the one original essence of all things; and the relation of the latter to the former has been variously considered. Spinoza has treated particularly of the one absolute substance, and given to it infinite thought and infinite extension as inseparable attributes.

Substantive. (See *Noun.*)

Substitution, in the civil law, is the appointment of an heir to succeed in case of the failure of one previously appointed. If the second person is to succeed in case of the death of the first, or of his not accepting the inheritance, the substitution is called *direct,* if the first heir is bound to convey the inheritance to the *substitute* or second heir. This is a *fidei-commissary substitution.* (See *Fidei Commissa.*) The former kind comprises the *vulgar substitution,* which is merely the appointment of a second heir in case the first should not inherit, and the *pupillary substitution,* which is the appointment of an heir, by a father or grandfather, in the name of a minor child, over whom he has paternal power, in case the latter should die a minor. The mother cannot make a pupillary substitution. The latter ceases, 1. by the death of the minor in question before the death of the testator; 2. by his arriving at full age; 3. by the paternal appointment failing to take effect; 4. by the withdrawing of the minor from the paternal power. The quasi pupillary substitution (*substitutio exemplaris*) is the appointment of an heir by parents for an idiot child, in case the child should die in a state of idiocy. If the child has lucid intervals, the parents are not allowed to make such substitution; otherwise, even the mother may do it.

Subtangent of a Curve, in the higher geometry, is the line which determines the intersection of the tangent with the axis, or that determines the point where the tangent cuts the axis prolonged.

Subtense, in geometry; the same with the *chord* of an arch.

Succession Powder. (See *Poudre de Succession.*)

Succinic Acid; an acid derived from the distillation of amber. By adding one twelfth part of sulphuric acid, diluted with an equal weight of water, the yield of acid is much increased. The acid, being dissolved in hot water, and filtered, is to be saturated with potash or soda, and boiled with charcoal. The solution being filtered, nitrate of lead is added; whence results an insoluble succinate of lead; from which, by digestion in the equivalent quantity of sulphuric acid, pure succinic acid is separated. It is in white transparent crystals, which possess a sharp taste, and powerfully redden tincture of turnsole. It is soluble in both alcohol and water. It forms salts with the alkalies and oxides. The succinates of potash and ammonia are crystallizable and deliquescent. That of soda does not attract moisture. The succinate of ammonia is useful in analysis to separate oxide of iron.

Succory. (See *Endive.*)

Suchet, Louis Gabriel, duke of Albufera, marshal of France, born at Lyons in 1770, entered the military service at an early age (1790), and passed rapidly through the inferior ranks. In 1796, he was attached to the army of Italy, and attracted the notice of general Bonaparte, by his courage, boldness and caution. He then served with distinction under Masséna and Joubert, and was one of the most active and successful of Napoleon's generals in the campaigns of 1805 and 1806. In 1808, he received the command of a division in Spain, and was almost constantly victorious till after the battle of Vittoria. His brilliant services in that country obtained him the marshal's staff, and the title of duke. After the restoration, Suchet was created peer of France. Having accepted, under Napoléon, a command during the hundred days, he was deprived of his seat on the second restoration, but readmitted in 1819. He died in 1826.

Sucking Fish. (See *Echeneis.*)

Suckling, sir John, a wit, courtier, and dramatist, son of a knight of the same name, was born in 1613, at Witham, in Middlesex. He is said to have spoken Latin fluently at five years old, and written it with ease and elegance at nine. After lingering some time about the court, he was despatched upon his travels, and served a campaign under the celebrated Gustavus Adolphus, in the course of which he was present at three battles and several sieges. At the time of the Scotch war, sir John raised a troop of horse for the king's service, who behaved so badly in the field as to disgrace both themselves and their commander. An abortive attempt to effect the escape of the earl of Strafford, confined in the Tower under articles of impeachment from the commons, implicated sir John so seriously, that he thought it advisable to retire to France, where he died in 1641. His writings consist of letters written with ease and spirit; some miscellaneous poems; Aglaura, a play; Brennoralt, a tragedy; the Sad One, a tragedy left incomplete; and the Goblins, a tragi-comedy.

Sucre, Antonio Jose de, was born in 1793, at Cumana, in Venezuela. He was educated at Caracas, and entered the army in 1811, where he served with credit under the orders of the celebrated Miranda. Afterwards he became favorably known for activity, intelligence and courage, under Piar, the mulatto general. From 1814 to 1817, Sucre served in the staff of the army, and displayed the zeal and talent which characterized him. In 1819, he had attained the rank of brigadier-general, and was one of the commissioners appointed, after the battle of Bojaca, to negotiate a suspension of hostilities with Morillo. Subsequently to this, he received the command of a division sent from Bogota to assist the province of Guayaquil. He met with a severe check at Huachi, but succeeded, late in the year 1821, in concluding an armistice with Aymerich, the royalist general, which was, in its effects, equivalent to a victory. It enabled the Peruvian division, under Santa Cruz, to form a junction with the Colombians. Hostilities recommenced in February, 1822, and the united armies were so fortunate as to achieve the decisive victory of Pichincha, May 24, 1822, which was immediately followed by the capitulation of Quito. This brilliant success fixed the public attention upon Sucre, and raised expectations of his future eminence, which the event fully justified. Meanwhile Bolivar had proceeded to the south, at the head of a large army destined to act against the Spanish forces in that quarter; and, in July, 1822, had an interview with the protector, San Martin, at Guayaquil. Early in 1823, Sucre was despatched to Lima as Colombian envoy, accompanied by an auxiliary Colombian army of 3000 men. Lima, having been left unprotected, at this time, by the departure of Santa Cruz to reduce the southern provinces, was retaken by Canterac, and abandoned by the president, Riva-Aguero, and the Peruvian congress, June 18, 1823. Hereupon Sucre was appointed commander-in-chief of the forces, and, a few days afterwards, supreme military chief, with powers almost unlimited. He retired to Callao, which was invested by the royalists, until the successes of Santa Cruz in the south obliged Canterac to evacuate Lima, July 17, 1823. Sucre then determined to place himself at the head of an expedition sent against Arequipa, and to coöperate with Santa Cruz. But the total destruction of the patriot army, under the latter, in Upper Peru, made it necessary for Sucre to reëmbark, and return to Callao. In September, general Bolivar made his public entry into Lima, having obtained permission from the Colombian government to prosecute the war in Peru, and was immediately invested with supreme authority in military and political affairs. Of course, general Sucre now became only second in command of the liberating army, consisting of 10,000 men, assembled at Huaras, preparatory to commencing offensive operations. But after the battle of Junin, gained by the patriots, August 5, 1824, Bolivar quitted the army, and went to Lima, to attend to affairs on the coast, leaving the prosecution of the war with Sucre. In the arduous and masterly movements which followed, Sucre displayed the skill of a consummate general. The scene of operations was the mountainous region of Peru. It was necessary that he should march and countermarch, for the space of two months, over this difficult ground, in the face of a much superior army, commanded by the ablest royalist generals in America, whose aim it was to cut off his resources, and reduce him without the hazard of a battle. But the impatience of the troops on each side brought on a general engagement in the field of Ayacucho, Dec. 9, 1824, the most brilliant ever fought in South America. Both armies consisted of veteran troops, well appointed and disciplined, who fought with undaunted courage. The battle resulted in the capture of the viceroy La Serna, and the loss of 2000 of the royalists in killed and wounded; and on the same day general Canterac, with the rest of the army, comprising fifteen general officers and nearly 4000 men in all, surrendered themselves prisoners of war, by capitulation. Sucre promptly followed up this glorious victory, and his troops entered Cuzco on the 12th of December in triumph. As Olañeta, with a small body of royalists in Upper Peru, refused to comply with the terms of the capitulation of Ayacucho, Sucre was obliged to march upon Puno, which he entered in February, and thence proceeded to Chuquisaca. The death of Olañeta, who was killed in April, in an affray with his own troops, accomplished the delivery of Upper Peru. Until a regular government could be established, Sucre, of course, remained in the exercise of authority as supreme chief; but he summoned a congress to assemble, as speedily as might be, at Chuquisaca, to decide whether Upper Peru should be annexed to Lower Peru, or to Buenos Ayres, or form a republic by itself. The constituent congress decreed, August 11, 1825, to form a new republic, by the name of *Bolivia*, and to call the capital by the name of *Sucre*, in whom the government was vested for the time being, with the title of "captain-general and grand-marshal of Ayacucho." The congress, having solicited Bolivar to prepare a fundamental code for Bolivia, dissolved itself, Oct. 6, 1825. The new congress assembled to receive it, May 25, 1826. Sucre then resigned the discretionary power, which he had exercised hitherto; but, contrary to his expressed wish, and contrary, probably, to his real desire, he was elected president of Bolivia, under the new constitution. How far apprehensions of the auxiliary Colombian army, still remaining in Upper Peru, influenced this decision of the electors, we do not know; but Sucre's reluctance to assume the presidency seems to have been sincere, because it was constantly persisted in by him, and ended in his resigning the office, and returning to Colombia. The influence of the revolution at Lima, in January, 1827, when the Colombian troops there overturned the government of Bolivar, and the people trampled under foot the Bolivian code, was of course felt in Bolivia. But Sucre endeavored to guard against the example being followed in Bolivia, and at the same time gave the strongest assurances to the new government of Peru, of his determination to maintain a strict neutrality. This did not prevent uneasiness and disturbances from growing up, which eventuated in a serious insurrection, and an attack upon Sucre, in which he was dangerously wounded, and lost an arm. If his resolution had not already been taken, these events would have served to hasten his departure, with that of the auxiliary Colombian army, which took place in August, 1828, in consequence of some hostile movements of the anti-Colombian party, aided by general Gamarra, from Peru. Notwithstanding this reverse in Bolivia, fortune soon threw a new field of distinction in the way of Sucre, in the war which now broke out between Peru and Colombia. He was made commander of the Colombian army of the south, and political chief of the southern departments of the Colombian republic, and led the troops in the series of military operations which terminated in the battle of Tarqui, and the humiliating defeat and capitulation of the Peruvians under general La Mar, Feb. 26, 1829. Sucre became a member of the constituent congress of 1830, and, on his return to Quito from that body, was assassinated in the neighborhood of Pasto, in June, 1830, whether by private enemies among the Pastusos, or by the instigation of some of his political rivals, is not ascertained. It probably was the act of some of the Pastusos, who remembered the severities which the Colombian army inflicted on them in the campaign of 1822, under the orders of Sucre.

Sudermannland. (See *Sweden*.)

Sueaborg, or Sweaborg; the northern Gibraltar; a fortress of Russian Finland, on the gulf of Finland; three miles south of Helsingfors; population, exclusive of the garrison, 3500. The harbor is capable of containing seventy men-of-war, easily defended by batteries that sweep the channel forming the only entrance for large ships. It is formed by several small islands, of which the principal, called Margöe, contains the arsenals, docks, basins, and magazines for fitting out or repairing men-of-war.

Suetonius. Caius Suetonius Tranquillus, a Roman writer, born of a plebeian family, flourished about 100 A. D. Little is known of the circumstances of his life. He distinguished himself as an advocate, obtained the tribuneship through the influence of Pliny the younger, and was appointed secretary (*magister epistolarum*) to the emperor Adrian. From an expression of Spartian in his Life of Adrian, we learn that Suetonius lost this place, on account of his intimacy with the empress Sabina; but the particulars of the affair are unknown to us. Of the works of Suetonius, only the Lives of the Twelve Cæsars, and Notices of celebrated Grammarians, Rhetoricians and Poets, are yet extant. The former work gives an interesting account of the private life and personal character of the twelve first Roman emperors, from Julius Cæsar to Domitian, and is of great value to us from the light which it throws on domestic manners and customs. The best editions of Suetonius are those of Pitiscus (1714), Burmann (1736), Oudendorp (1751), Wolf (1802), and Baumgarten-Crusius (1816 seq.). There is an English translation by Thompson.

Sueur, Le. (See *Lesueur*.)

Suevi; the general name of a number of united tribes, who, before the Christian era, inhabited the greater part of Germany. The Hermunduri, Semnones, Lombards, Angles, Vandals, Burgundians, Rugii and Heruli, were the most important, at least the most known. In Cæsar's time, they advanced to the Neckar and the Rhine. Tacitus says that their name was derived from the cue in which they tied their hair. In the great migration of the northern nations, the Suevi joined the Alans, entered Gaul, and, in 409, Spain. After the Vandals had gone to Africa, the Suevi spread as far as Portugal. The Visigoths overcame them entirely in 586, and their empire and name disappeared from Spanish history. Those of them who remained in Germany were the ancestors of the present Suabians.

Suez, a city of Egypt, on the borders of Arabia (lon. 32° 28′ E.; lat. 29° 59′ N.), is remarkable for its situation at the north end of the Red sea, and on the south border of the isthmus to which it gives name. It was formerly a flourishing mart, being at once the emporium of the trade with India, and the rendezvous of the numberless pilgrims, who, from various parts of the Turkish empire, resorted to Mecca. The assemblage of these, though the stationary population was never large, produced an immense crowd. When Niebuhr was there, Suez appeared to him as populous as Cairo. Since that time, it has greatly declined, in consequence both of the diminution of the general trade of the Red sea, and of the concourse to Mecca. It also sustained great injury from the French. The population is now only about 500. Suez, though a maritime place, is so situated that vessels cannot approach nearer than two and a half miles. The surrounding country is a mere bed of rock, slightly covered with sand. It is, however, the channel of much of the trade of Cairo to Arabia and India, and of the whole of that to Syria and Palestine. It is without walls; has 500 stone houses, of which more than one half were destroyed by the French, and still continue in ruins. The canal which formerly connected the gulf of Suez with the Nile, is now choked up.

Suffetes. (See *Carthage*, vol. ii., p. 544.)

Suffocation. The three ordinary modes of suffocation, or death by the interruption of the breath, are, hanging, drowning, and the respiration of fixed air, or carbonic acid gas. The same result takes place from either of these causes, which is described under the article *Drowning*, and the same process is required for the restoration of animation. In the instance of suffocation by carbonic acid air, whether arising from mines, limekilns, or vats of fermenting liquor, the vital powers become more speedily extinct.

Suffragans. (See *Bishops*, vol. ii, p. 115.)

Suffragium (Latin for *vote*; hence the English *suffrage*), with the Romans, signified particularly the vote which every Roman citizen had a right to give in the *comitia*, in regard to the introduction or abolition of laws, the appointment to offices, or any similar business. The citizens assembled, on such occasions, in the *Campus Martius*, every one in his century, which proceeded in its turn to the *ovile*, the place assigned for voting. At the entrance there were small bridges, upon which certain persons (*diribitores*) gave them small ballots; if a new law was to be introduced, two ballots, one with the letters U. R. (*Uti rogas*, Let it be as proposed), the other with the letter A. (*Antiquo*, I leave it as it is); or, if an officer was to be chosen, as many ballots were given as there were candidates. The majority then decided.

Sufism; the pantheistic mysticism of the East, which strives for the highest illumination of the mind, the most perfect calmness of the soul, and the union of it with God, by an ascetic life, and the subjugation of the appetites. This pantheism, clothed in a mystico-religious garb, has been professed, since the ninth and tenth centuries, by a sect which at present is gaining adherents continually, among the more cultivated Mohammedans, particularly in Persia and India, and about twelve years ago, comprehended 80,000 disciples in Persia, who had renounced Mohammedanism. One of the most zealous Sufis is the Arabian Azzeddin, born at Jerusalem, in the twelfth century, whose work Birds and Flowers, a moral allegory, has been translated by Garcia de Tassy (Paris, 1821). All religious persons who live together in a monastic way, devoted to an ascetic life, are called in the East *Sufis*. Some have derived this word from the circumstance that they dress in wool only; but Joseph von Hammer (q. v.) has disproved this derivation, in the Vienna Journal of Art, Literature, the Theatre, &c. (1828, No. 59), and maintains that the name *Sofi* is related to the Greek σοφος, wise, and σοφος, clear, on account of the mirror which the Sofi carried as a symbol, as well as to the Arabian *safi* (pure). The Arabians had, from the earliest times, an inclination to a life of religious contemplation and monastic solitude. Hence as early as under the first caliphs, religious fraternities were formed, which renounced every thing earthly. As the four orthodox Mohammedan sects established several systems of scholastic philosophy, and a number of monkish orders grew up, in the second century of the Hegira, devout persons, perplexed by this labyrinth of discordant theological opinions, found consolation in pious mysticism. This was the origin of the Sufis, whose idea of a mystical union of man with God (which, however, is not founded in the doctrines of Mohammedanism, but, according to Langlès, Reiske, Hammer, and Malcolm, is of Indian origin) gave rise to fanaticism, similar to that of the Christian mystics. The Sufis teach their doctrine under the images of love, wine, intoxication, fire, &c.; and the songs of Hafiz (q. v.), one of the most distinguished Sufis, which seem to be Anacreontic strains in praise of love and wine, should rather be considered as setting forth the mystic doctrines of his sect. Even the dances of the Mohammedan monks have a mystic meaning. By the Devil, the Sufis generally understand the sensual appetite; they acknowledge no other devil than the darkness of the soul, unenlightened by truth. In the first volume of the Transactions of the learned society at Bombay (London, 1819) is an important treatise on the mystic doctrine of the Sufis, by Graham. The doctrines of the Oriental mystics have also been illustrated by Silvestre de Sacy, in the *Pendnameh*, by Erskine, in several treatises in the Bombay Transactions, by Hammer, in his History of Persian Belles-lettres (under the heads of *Dschelaleddin*, *Rumi*, and *Dschami*), and particularly by Tholuck, in his *Ssufismus Persarum*, &c. (Berlin, 1821), from Oriental manuscripts. The most important information on this subject is contained in the Drops of the Well of Life, a Persian work, translated into Turkish, and published, in 1820 (Hegira 1236), at Constantinople (printed at Scutari), a work of the greatest authority with the Persians and Turks. (See Hammer's remarks in the Leipsic Literary Gazette of 1822, p. 2054.) Hussein, known under the name of *Sufi*, wrote a History of the most famous Sheiks of the Order of the Dervises (*Nacshbendi*) in the year 1503 (Hegira 909). The order of *Nacshbendi* originated, indeed, as late as the time of sultan Osman (1319; Hegira 709); but all the Mohammedan religious orders trace their doctrines, and their claims to mystic power (transmitted by the communication of the breath and mantle), to Abubeker and Ali, the disciples of the prophet. Mohammed had said, indeed, "There is no monasticism in the Islam;" but the spirit of monasticism, which originally had its seat in India and Upper Asia, soon penetrated into his religion, when the Arabians, having become acquainted with Indian, Greek and Persian literature, began to devote themselves to study and contemplation. Thus originated the Mohammedan ascetics. But the pantheistic doctrine of the modern Sufis, subsequently introduced, agrees so remarkably with the doctrine of the Indian Vedanta, that the Indian origin of Sufism cannot be denied.

SUGAR. This important substance is a constituent part of a number of plants. It is afforded especially by the sugar-cane, the maple, and the beet. When the cane is ripe, it is cut down, and crushed between iron cylinders, moved by the steam-engine, water, or animal strength. The juice is received in a shallow trough, placed beneath the cylinders; whence it is conveyed into boilers, where it is heated with lime, care being taken to remove the scum as it rises. After having undergone considerable evaporation, it is called *syrup*, and is poured into a vessel called the *cooler*, where it is agitated with wooden stirrers, which break the crust as it forms on the surface. It is afterwards poured into casks, to accelerate its cooling; and, while it is still warm, it is conveyed into barrels, standing upright over a cistern, and pierced through their bottom with several holes, stopped with cane. The syrup, which is not condensed, filters through these canes, into the cistern beneath, and leaves the sugar in the state called *Muscovado*. This sugar is yellow, and is further purified by various processes, as that of boiling with bullock's blood, or with animal charcoal (bone black); and the passing of the syrup through a system of canvass filters, aided by the intermixture with it of a small quantity of pasty, gypsum and alumina, made by saturating a solution of alum with quicklime. Loaf sugar is procured by putting the sugar, after it has been thus purified, into unglazed, earthen, conical-shaped vessels, having a hole at the apex, but placed in an inverted position: the base, after the sugar is poured in, is covered with clay. When thus drained of its impurities, it is taken out of the mould, wrapped in paper, and dried or baked in an oven. It is now loaf sugar, and, according to the number of processes which it undergoes, is called *single* or *double refined*. Sugar candy is formed by dissolving loaf sugar in water, over a fire, boiling it to a syrup, and then exposing it to crystallize in a cool place. This is much esteemed in the East. The syrups which cease to afford sugar are sold by the name of *molasses*. The manufacture of sugar from the beet, which has now become so extensive in France, is a more complicated process. The beet roots are pulled out of the ground, and their necks and rootlets cut off. They are then washed, reduced to a pulp by a rasping machine, and pressed to obtain their juice, which scarcely differs from that of the cane, except in being somewhat less rich in sugar. The juice is transferred to a copper boiler, furnished with two stop-cocks, the one of which is fixed near the bottom, and the other a few inches higher up, being previously mixed with one four hundreth part of sulphuric acid and a quantity of cream of lime, rather more than enough for the saturation of the acid. Heat is now applied as briskly as possible to the copper. A solid, thick froth, of a greenish-gray color, forms, and deposits to a considerable amount, and the juice assumes a yellow hue, and becomes clarified. After an hour or two, the scum is removed, and thrown on drainers, to save as much of the juice as possible. The clear juice is now run off successively, by the two stop-cocks, beginning with the higher, and the sediment is added to the froth on the filters. The juice is next transferred to a boiler, built on a level below the first, and is there evaporated by a quick fire. Whenever its density reaches to 1.12 (24° of Twaddel's hydrometer), animal charcoal is introduced in powder, and the concentration carried on, till its specific gravity is 1.24 (48° of Twaddel). The froth is removed as it forms. About two parts of animal charcoal are usually added to 100 of juice. The syrup is now filtered through woollen cloth, and allowed to cool. In the course of the night, a considerable quantity of sulphate of lime is deposited, which must be carefully separated, prior to boiling up the liquor for crystallization. This concluding stage of the process is the same as that employed for the juice of the sugar-cane. The refining of the raw beet sugar is conducted in the same way as that of the cane, and the results are described as being equally productive. The extraction of sugar from the juice of the maple is exceedingly simple. At the commencement of the spring, in the Northern States and Canada, the sugar maple trees are tapped near the ground, by numerous apertures, and the sap is collected in wooden troughs; two hundred pounds of which afford, by evaporation, fifteen pounds of a brownish sugar, which is capable of being refined in the same manner as the sugar from the cane and the beet.

Pure sugar occurs as a white granular solid, but may be crystallized in four or six-sided prisms, terminated by two-sided, or sometimes by three-sided summits. Its specific gravity is 1.4' to 1.6'. The crystals are nearly anhydrous. When exposed to heat, sugar swells up, is decomposed with a peculiar smell, and finally bursts into flames at a temperature somewhat below ignition. When dissolved in one third its weight of water, it forms a syrup, which keeps well in close vessels; but if considerably diluted with water, it rapidly changes, particularly with contact of air, becoming sour and mouldy. Sugar is hardly soluble in pure alcohol, though proof spirit dissolves it in considerable quantity. Syrups, which have been rendered uncrystallizable, bitter and astringent, by combination with lime, barytes and strontites, resume their original properties, when these bases are separated by the equivalent quantity of sulphuric acid. The same holds true with regard to potash and soda. When quicklime is left for several months in combination with syrup, carbonate of lime is deposited in very acute rhomboids, and the sugar is converted into a mucilaginous jelly, of the consistence of paste. Several other oxides, and especially that of lead, have the power of combining with sugar. Thus, when ground litharge is heated with sugar and water, it is dissolved; but after a while the liquor becomes opaque, and lets fall a white, insipid, light powder, insoluble in even a great quantity of boiling water, and which is a compound, in its dried state, of 100 of sugar, and 139.6 of oxide of lead. This saccharate of lead is decomposed by the feeblest acids, which seize the lead. Subacetate of lead does not precipitate sugar from its solution; and as this salt throws down almost every other vegetable and animal substance, it may be employed to separate sugar from other matters. Sugar has no action on salts, except at an elevated temperature. With the aid of water, it then reduces muriate of gold, the nitrates of mercury, and silver, the sulphate of copper, and reduces to the lowest term of oxidation several other salts. Sugar has been analyzed by several chemists. The following is a general view of the results:

	G. Lussac and Thenard.	Berzelius.	Prout.	Ure.
Oxygen,	50.63	49.856	53.35	50.33
Carbon,	42.47	43.265	39.99	43.38
Hydrogen,	6.90	6.879	6.66	6.29
	100.00	100.00	100.00	100.00

M. Braconnot has recently extended our views concerning the artificial production of sugar and gum. Sulphuric acid (specific gravity 1.827) mixed with well dried elm dust, became very hot, and on being diluted with water, and neutralized with chalk, afforded a liquor which became gummy on evaporation. Shreds of linen triturated in a glass mortar, with sulphuric acid, yield a similar gum. Nitric acid has a similar power. If the gummy matter from linen be boiled for some time with dilute sulphuric acid, we obtain a crystallizable sugar, and an acid, which M. Braconnot calls the vegeto-sulphuric acid. The conversion of wood, also, into sugar, will no doubt appear remarkable; and when persons not familiar with chemistry, are told that a pound of rags can be converted into more than a pound of sugar, they may be disposed to consider the statement as a piece of pleasantry, though nothing can be more true.

SUGAR-CANE (*saccharum officinarum*). The art of cultivating the sugar-cane has been practised in China from the highest antiquity. It was unknown to the ancient Egyptians, Jews, Greeks, or Romans, and did not pass into Arabia till the end of the thirteenth century. From Arabia it was carried into Egypt, Nubia, and Ethiopia. The Moors obtained it from Egypt, and the Spaniards from the Moors. In the fifteenth century, the cane was introduced into the Canary islands by the Spaniards, and into Madeira by the Portuguese, and thence into the West India islands and the Brazils. Previous to the year 1466, sugar was known in England chiefly as a medicine; and, though cultivated in a few places on the Mediterranean, it was not more generally used on the continent. Now, in point of importance, it ranks next to wheat and rice, among all the products of the vegetable world, and has become the first article of maritime commerce. The Atlantic has been the principal theatre of this trade, which, more than any other circumstance, contributed to give a new spring to commerce in Europe, and to engraft the curse of slavery upon the new world. The sugar-cane, like the bamboo and Indian corn, belongs to the family of the grasses. It grows to the height of seven or eight feet, or more, and its broad leaves, and large, silky panicles, give it a beautiful aspect. The stems are very smooth, shining, and filled with a spongy pith: the flowers are small, and very abundant, clothed externally with numerous silky hairs. The sugar-cane flowers only after the lapse of an entire year. In the West Indies, it is propagated by cuttings from the root end, planted in hills or trenches in the spring or autumn. The cuttings root at the joints under ground, and from those above, send up shoots, which, in eight, twelve, or fourteen months, are from six to ten feet long, and fit to cut down for the mill. A plantation lasts from six to ten years. (For the process of making sugar, see the preceding article.) The juice of the sugar-cane is so palatable and nutritive, that, during the sugar harvest, every creature which partakes freely of it, whether man or animal, appears to derive health and vigor from its use. The meagre and sickly negroes exhibit at this season a surprising alteration; and the laboring horses, oxen, and mules, though constantly at work, yet, as they are allowed to eat, almost without restraint, of the refuse plants and scummings from the boiling house, improve infinitely more than at any other period of the year. The sugar-cane is now cultivated in all the warm parts of the globe. In the U. States it flowers, but does not ripen seed. Its growth is constant, but varies in rapidity according to the situation, the season, or the weather. The variety from Otaheite has lately elicited some attention, as it is said to succeed in soils too poor for the common variety, and to produce four crops, while the other yields only three: the crystallization is also more regular. Sugar is now cultivated to considerable extent in the U. States, chiefly in the southern parts of Louisiana, about the mouths of the Mississippi; and a sufficient supply for home consumption might be obtained in that quarter. The consumption of England alone now amounts to upwards of 400,000,000 pounds, which gives an average of about thirty pounds for each individual. In some parts of the interior, sugar is manufactured to considerable extent from the sap of two species of maple. This is superior to the common brown sugar of the West Indies, but probably will eventually be superseded by that article, on account of its cheapness. (See *Maple.*)

Sugar of Lead. (See *Lead.*)

Suhl, or Suhla; a town in the government of Erfurt, in the Prussian province of Saxony, lying in a romantic valley on the Lauter, on the south-west side of the Thuringian forest. It owes its importance to the mines which were discovered here in the fourteenth century. The iron works, and the manufacture of arms, form the chief employment of the inhabitants. The fire-arms made here are highly esteemed. Population, 5800; twenty-eight miles south-west of Erfurt.

Suhm, Peter Frederic von, Danish chamberlain and historiographer at Copenhagen, born in 1728, was a philosopher, poet and historian. His father, a Danish admiral, educated him carefully. He died, in 1798, at Copenhagen. Suhm possessed a large fortune, which he used in aid of charitable objects and literary enterprises. He acquired reputation, as a critic and philosopher, by his moral essays and treatises of practical utility, as a poet, by his Northern Idyls and Tales, and as a classical historian, by his works on the history of his country. His library contained 100,000 volumes. He supported a librarian, and paid large sums for copying manuscripts, and in aid of poor students. The library was open to every one. Of his numerous works we need only mention his *Scriptorum Rerum Daniæ Medii Ævi*; his Introduction to the Critical History of Denmark (1769—73, 5 vols., 4to.); the Critical History of Denmark during the Pagan Ages (1774—81, 4 vols.); the Modern History of Denmark (of which seven volumes have been published, the first of which appeared in 1782). His miscellaneous works were collected and reprinted, with an account of his life, at Copenhagen (1788—98, 15 vols.).

Suicide. (See *Homicide.*)

Suidas; a Greek grammarian, who lived, according to some, in the eleventh century, according to others in the tenth. He wrote an encyclopædia, particularly relating to geographical and historical subjects, which, though not perfectly accurate, is yet important, as it contains many things not to be found elsewhere. The best edition is that of Küster (Cambridge, 1705, 3 vols., folio).

Suit at Law. (See *Action.*)

Suliots; a mixed people of Arnaout and Greek descent, speaking the Arnaout and the Romaic dialects. They derive their origin from Arnaout and Grecian shepherds, who, in the seventeenth century, settled in the Cassiopeian mountains, occupying a wild valley, enclosed on three sides by almost inaccessible mountains, and accessible on the fourth only by a narrow defile. Here their numbers had increased, towards the end of the last century, to 10,000 souls, in seventy villages, of which Suli or Souli was the capital of the district. The Suliots are of the Greek church; their government was republican. They are brave, hardy, active, resolute and faithful. When, after a struggle of twelve years, Ali Pacha (q. v.) had rather reduced them to despair than conquered them (1803), they abandoned their country, and entered the service of the powers who had possession of the Ionian Islands. But when Ali found himself hard pressed by the Turks and deserted by the Albanians, he recalled the Suliots to his assistance. Their brave leader, Marco Botzaris, gained some brilliant successes; but the tyrant, who trusted neither the Suliots nor the other Greeks, perished in 1822. The Albanians then joined the Turks; but the Suliots remained true to the cause of Grecian liberty. Suli, however, was reduced by famine, Sept. 4, 1822, and 3000 Suliots embarked in English ships for Cephalonia: the rest dispersed themselves in the mountains. The younger Marco Botzaris, son of the above-mentioned leader of the same name, threw himself into Missolonghi, which he successfully defended, and afterwards fell at Carpinitzi. (See *Greece, Revolution of.*) His uncle, Noto Botzaris, defended Missolonghi in 1826. (See *Missolonghi.*) The corps of 500 men, raised and equipped by lord Byron at his own expense, was composed of Suliots, for whom he had a great admiration. (See *Byron.*)

Sulla, or Sylla, Lucius Cornelius, Roman dictator, was born at Rome, U. C. 617 (B. C. 137), of the old and noble, but reduced, family of the Cornelii. He received a good education, but indulged himself in excessive dissipation and debauchery. A large fortune, partly left him by a courtesan, and partly obtained by marriage, enabled him to take a distinguished rank among the Roman knights, and to turn his attention to the career of ambition. He served, with brilliant success, as questor in Africa; and it was through his instrumentality that Bocchus was prevailed upon to surrender Jugurtha to the Romans—an event which terminated the Numidian war. Sulla next served under Marius in the Cimbrian war, until, to avoid the jealousy of the latter, he joined the army of the consul Catulus, and, having twice defeated the Samnites, was chosen pretor. Having passed the year of his pretorship at Rome, he was, at the expiration of his term, appointed to the government of Asia Minor, where he established Ariobarzanes upon the throne of Cappadocia, and completely subdued Gordius, guardian of a son of Mithridates, then on the throne, in a single battle. He then concluded an alliance with the king of the Parthians, and conducted with so much haughtiness that one of the Cappadocians present exclaimed, "Surely this man is or will be master of the world." In the social war, in which Sulla and Marius were at the head of two separate armies, the indefatigable activity and daring courage of the former threw the reputation of the latter into the shade. Yet he himself declared that fortune had a greater share in his success than his own merit; and he readily accepted the surname of Felix (fortunate). The consulship was the reward of his services (B. C. 88); and the province of Asia, with the conduct of the war against Mithridates, fell to his lot. But Marius was also ambitious of this command, and procured a decree of the people that it should be intrusted to him. Sulla therefore entered Rome at the head of his army, and, after setting a price on the head of his enemy, finally sailed for Greece, a great part of which had been conquered by Mithridates. Here his good fortune still followed him. He expelled Mithridates from Europe, pursued him into the heart of his Asiatic dominions, was victorious in every direction, and finally granted peace, on his own terms, to the enemy, on account of the state of affairs in Italy. During his three years' absence from Italy, his enemies had regained the superiority in Rome. Marius had been recalled; the blood of the friends of Sulla had been shed in torrents; he himself had been proscribed, and his property confiscated. Marius, exhausted by age and tortured by a guilty conscience, left his bed to oppose the return of his rival (see *Marius*), but died soon after entering upon his seventh consulship. The leaders of his party, Cinna and Carbo, still, however, continued to conduct the public affairs, when Sulla, having intrusted the chief command in Asia to Murena, hastened to Italy at the head of 40,000 men. He landed at Brundusium, and was joined by many of his friends who had been banished from Rome. His enemies were much superior in numbers; but his courage and address rendered him victorious. After having gained four battles over the Roman forces in person, besides several through his generals, and, at the close of the war, defeated a Samnite army under Telesinus, before the walls of Rome, and having witnessed the destruction, captivity or flight of his enemies, he entered the city as a master. One of his first acts was, to put to death between 6000 and 7000 prisoners of war in the circus; and when the senate, assembled in the temple of Bellona, testified their horror at hearing the shrieks of the victims, he coldly said, "Regard it not, fathers; it is only a few rebels who are punished by my orders." Rome and all the provinces of Italy were filled with the most revolting scenes of cruelty. After satisfying his vengeance by the murder or proscription of several thousands, destroying all the cities of Samnium except three, and massacring the whole population of Preneste, he celebrated a triumph, exceeding in splendor any that had preceded it, and caused himself to be named dictator for an indefinite period (B. C. 81). He now ruled without restraint; repealed and made laws; abolished the tribuneship; added 300 knights to the senate, and admitted 10,000 slaves of persons proscribed to the rights of citizenship. After a few years, to the astonishment of all, he laid down his dictatorship (B. C. 79), and declared himself ready to answer for his actions, although he had caused above 100,000 men, among whom were ninety senators, fifteen men of consular rank, and 1600 knights, to be put to death. Retiring to Puteoli, and abandoning himself to all sorts of debauchery, he died, the following year, of a disgusting disease, occasioned by his excesses. Naturally insinuating and persuasive, Sulla endeavored, in his youth, to please universally. He spoke of himself with modesty, but was lavish of praises, and even of money, towards others. With the common soldiers he was familiar, adopting their customs, drank with them, and partook of their amusements and hardships. At times, he was severe, active and vigilant, and impenetrable even to the companions of his excesses. He lent a ready ear to soothsayers and astrologers; and his character was stained by sensuality, avarice and cruelty. Yet he had sufficient self-control to tear himself from his pleasures when ambition commanded. He was an able general and a great statesman; cruel, but faithful to his promises; calm and cold, but inflexible in his purposes. He sacrificed even his friends to the laws which he himself made and violated, and compelled his fellow citizens to be better than himself. He ordered it to be inscribed on his tomb, that no man had ever equalled him in doing evil to his enemies, nor in doing good to his friends.

Sullivan, John, a distinguished general in the American revolutionary army, was the eldest son of a Mr. Sullivan, who came from Ireland about the year 1723, and, after keeping a school in several parts of the eastern country, settled at Berwick, in the district of Maine, where he died at the age of 105. For several years before the revolution, the subject of this sketch practised law in New Hampshire with great success. In 1772, he became major of a regiment of militia; and as soon as hostilities commenced, he was among the first to take an active part. In 1774, he was a member of the first general congress, but resigned his seat to enter the army. In 1775, he was appointed a brigadier-general in the American army; and, during that campaign, commanded on Winter hill. In the following year, he was promoted to the rank of major-general, and sent to Canada, where he took command of the troops on the death of general Thomas. In effecting his retreat from that province, he displayed great military skill and resolution. He was soon afterwards, in the same year, invested with the command of Greene's division, on Long Island, in consequence of the illness of that general, and, in the battle of August 27, was taken prisoner. In October, he was exchanged for general Prescott, and, in the ensuing December, was placed at the head of the division of general Lee, who had been captured by the enemy. At the battle of Trenton, he commanded the right division. August 22, 1777, he planned and executed an expedition against Staten Island, for which, on an inquiry into his conduct, he received the approbation of the court. In the battles of Brandywine and Germantown, he also commanded the right division. In the winter of 1777, he was detached to take command of the troops in Rhode Island; and in August of the following year, he laid siege to Newport. The causes of the failure of this enterprise; the difficulties which occurred between general Sullivan and count d'Estaign, the commander of the French fleet, who was to assist the land operations, but abandoned the siege, and sailed to Boston,—are too well known to require relation. He raised the siege, and was pursued by the enemy, whom he repulsed. The next day he passed over to the continent, without the slightest suspicion, on the part of the British, of his movements. In the summer of 1779, he commanded an expedition, planned by general Washington, against the Six Nations of Indians in New York. Being joined by general Clinton, August 22, he began his march towards the enemy, who were stationed at Newtown, between the south end of Seneca lake and Tioga river, and, attacking them in their works, completely dispersed them. He then laid waste the country, and destroyed all their villages, in order to put a stop to their depredations. General Sullivan had made such high demands for military stores, and had so freely complained of the government for inattention to those demands, as to give great offence to some members of congress, and to the board of war. He, in consequence, resigned his command, November 9. After the peace, he resumed the practice of his profession. He was one of the convention which formed the state constitution for New Hampshire, and was chosen a member of the first council. In 1786, he was chosen president of that state, in which station he continued for three years. In October, 1789, he was appointed district judge of New Hampshire. He died January 23, 1795, aged 54 years.

Sullivan, James, a brother of the foregoing, and governor of Massachusetts, was born at Berwick, Maine, April 22, 1744. He was educated entirely by his father. The fracture of a limb, in early life, caused him to turn his attention to legal pursuits, instead of embracing the military career, for which he had been destined. After studying with his brother, general Sullivan, he was admitted to the bar, and soon rose to celebrity. He was appointed king's attorney for the district in which he resided; but the prospects of advancement which he might have reasonably entertained, did not prevent him from taking an early and decided part on the side of his country, at the commencement of the revolutionary struggle. Being a member of the provincial congress of Massachusetts, in 1775, he was intrusted, together with two other gentlemen, with a difficult commission to

Ticonderoga, which was executed in a very satisfactory manner. In the following year, he was appointed a judge of the superior court. In 1779 and 1780, he was a member of the convention which framed the constitution of the state. In February, 1782, he resigned his judgeship, and returned to the bar. In 1783, he was chosen a member of congress, and, in the following year, was one of the commissioners in the settlement of the controversy between Massachusetts and New York, respecting their claims to the western lands. He was repeatedly elected a representative of Boston, in the legislature. In 1787, he was a member of the executive council, and judge of probate for Suffolk; and, in 1790, was appointed attorney-general, in which office he continued till June, 1807, when he was elevated to the chief magistracy of the commonwealth. He was in 1796, appointed, by president Washington, agent, under the fifth article of the British treaty, for settling the boundaries between the U. States and the British provinces. He was a second time chosen governor of the state; but soon afterwards, his health became enfeebled, and on the 10th of December, 1808, he died, in the 65th year of his age. Governor Sullivan was the projector of the Middlesex canal. Amidst his professional and political pursuits, he found time to prepare several works, mostly on legal or political subjects. One is a History of the District of Maine, which is a creditable monument of his industry and research.

Sullivan Island is between Ashley and Cooper rivers, six miles below Charleston, South Carolina. It is much resorted to by the people of Charleston, during the summer season. Fort Moultrie, on this island, received its name in honor of colonel Moultrie, for his very gallant defence of it, June 28, 1776. Sir Henry Clinton made an attack on it with the British squadron, for the purpose of taking possession of Charleston. The American army at this place was then commanded by general Lee. The fire from the fort was so well directed, that the British suffered very severely. The defence of the city was completely successful, and the American loss was only thirty-five men.

Sully, Maximilian de Bethune, duke de; marshal of France, and first minister of Henry IV; one of the most estimable men that ever guided the helm of state. He was born at Rosny, of an ancient and noble family, in 1559, and educated in the Protestant (Calvinistic) faith. At the age of eleven years, he was presented by his father to the queen of Navarre, and her son Henry, with whom he was educated. In 1572, he accompanied the young prince to Paris, for the purpose of pursuing his studies there, and was preserved, during the massacre of St. Bartholomew's, by the president of the college of Burgundy, who concealed him for three days. In the service of the young king of Navarre (see *Henry IV*), the baron de Rosny, as he was then styled, distinguished himself, on several occasions, by a bravery approaching to rashness. At Ivry (1590), where he took the standard of the duke of Maine, he was most dangerously wounded. In 1591, he took Gisors; and the capture of Dreux in 1593, Laon in 1594, La Fere in 1596, Amiens in 1597, and Montmelian in 1600, added to his reputation as a warrior. But his abilities as a diplomatist and financier were no less remarkable. In 1586, he concluded a treaty with the Swiss, for a supply of 20,000 troops for his master's service; and in 1597, he was placed at the head of the department of finance, and two years after, he was declared superintendent. About the same time (1599), he also negotiated the marriage of Henry with Mary de' Medici. In his embassy to England, after the death of queen Elizabeth, (1603), he displayed great penetration and address, and concluded a treaty with James I, advantageous to the interests of both countries. In addition to his other offices, he was appointed grand surveyor of France, grand master of the artillery, governor of the Bastile (1602), and superintendent of fortifications throughout the kingdom. His labors, as minister of finance, were attended with the happiest success; and the revenues of the government, which had been reduced to a state of complete dilapidation, by the combined effect of civil anarchy and open warfare, were by his care restored to order, regularity, and affluence. With a revenue of thirty-five millions, he paid off, in ten years, a debt of two hundred millions, besides laying up thirty-five millions. Though frequently thwarted in his purposes by the rapacity of the courtiers and mistresses of the monarch, he nobly pursued his career, ever distinguishing himself as the zealous friend of his country, and not the temporizing minister of his master. His industry was unwearied. He rose every morning at four o'clock, and, after dedicating some time to business, he gave audience to all who solicited admission to him, without distinction of persons. After his return from his mission to England, he was made governor of Poitou, and grand master of the ports and harbors of Provence; and the territory of Sully-sur-Loire was erected into a duchy in his favor, in 1606. On the murder of Henry IV, he was obliged to retire from court (1611); but, after some years, he was recalled by Louis XIII; and, on making his appearance in the royal circle, the courtiers did not treat him with that respect to which he thought himself entitled; on which he said to the king, "Sire, when your father did me the honor to consult me, we never spoke on business till he had dismissed his flatterers and buffoons to the ante-chamber." In 1634, he received the staff of a marshal, in exchange for the office of grand master of the artillery. His death took place at Villebon, December 22, 1641. Although Sully approved Henry's conversion to the Catholic faith, yet he himself remained true to his Protestant principles. The courtiers, dissatisfied with his strictness, often ridiculed and complained of him; but even the king's most favored mistress could not prejudice his royal master against him. (See *Estrées*.) Sully's *Mémoires des sages et royales Economies d'État, domestiques, politiques, et militaires de Henri le Grand*, was printed at Sully, under the eye of the author, in 1636. The second and third volumes did not appear till 1662. There have been many reimpressions, some of which have been mutilated by other hands. These memoirs give us a vivid and accurate picture of the courts of Charles IX, Henry III, and Henry IV, and particularly of the character, habits, public policy, and private life of the latter monarch.

SULPHATE. (For the various sulphates, see the respective articles.)

SULPHUR. We shall first give the mineralogical history of this substance. It occurs abundantly in nature, both crystallized and massive. The form of its crystals is an acute octahedron, either perfect, or variously modified, and derivable from an octahedron with equal and similar scalene triangular planes, of which the common base of the two pyramids is rhombic; cleavage imperfect; fracture conchoidal; lustre resinous; color several shades of sulphur-yellow, inclining sometimes to red or green; streak sulphur-yellow, passing into white; transparent or translucent; sectile; hardness between gypsum and calcareous spar; specific gravity 2.072. The massive varieties occur in imbedded globules, also in large pieces, having a granular or impalpable composition, and an uneven or flat conchoidal fracture. The present species has usually been treated of under two divisions, viz. *common* and *volcanic* sulphur, in allusion to the geological situation of the two varieties; the volcanic sulphur being a product of sublimation, while the common sulphur is found in strata not immediately connected with volcanic rocks. Volcanic sulphur appears in the shape of crusts, superficial coatings, stalactites, or loose, mealy masses, and consists generally of columnar particles of composition, not unfrequently terminating in crystalline points. Common sulphur has been further divided into *compact* and *earthy*, the last of which comprehends those varieties which, on account of the smallness of the individuals in the granular compositions, appear as a friable, mealy powder. Sulphur is principally met with in beds of gypsum, or in the accompanying strata of clay. It is generally associated with sulphate of strontian. It also occurs with copper pyrites, galena, and orpiment. It is deposited from several springs, and in large quantities from volcanoes. In Sicily, and several provinces of Italy, sulphur is found in splendid crystals, as well as in globular concretions. It occurs in imbedded spheroidal masses of a brown color, which is owing to bitumen, at Radoboy, near Crapina, in Croatia. The finest crystals, after those of Sicily, are brought from Conil, near Cadiz, in Spain. It occurs in veins in Suabia, Spain and Transylvania. The earthy sulphur is found in Poland, in Moravia, and other countries; the volcanic sulphur in Iceland, near Vesuvius in the Solfatara, in fine crystals in Teneriffe, in great profusion near the volcanoes of Java, and in the vicinity of most other active volcanoes. In general, it requires to be purified, either by melting or by sublimation, in order to render it fit for use in the arts.

Sulphur, in a state of purity, is destitute of odor, and of a weak, though perceptible taste. It is a non-conductor of electricity, and of course becomes electric by friction. The specific gravity of roll sulphur varies from 1.97 to 2.00. It undergoes no change from exposure to the air, and is insoluble in water. If a considerable piece of sulphur be exposed to a sudden, though gentle heat, by holding it in the hand, for instance, it breaks to pieces with a crackling noise. When heated to the temperature of about 170°, it rises up in the form of a fine powder, which may be easily collected in a proper vessel. This powder is called *flowers of sulphur*. When heated to the temperature of 218°, it melts, and becomes as liquid as water. Between the melting point and 252°, it is as liquid as varnish, and its color is that of amber. About the temperature of 340°, it begins to grow thick, and assumes a reddish tinge; and if we continue to increase the temperature, it becomes so thick, that the vessel containing it may be turned upside down without the risk of spilling any of it. Between the temperature of 428° and that of 482°, it is thickest of all, and its color is reddish-brown. From 482° to its boiling point, which is not far from 750°, it becomes thinner, but never so thin as it was when below the temperature of 248°; and its reddish-brown color does not alter. If it be suddenly cooled while in the most liquid state, as by throwing it into water, it becomes instantly brittle; but if it was so hot as to be viscid, and be suddenly cooled, it remains quite soft; so that it may be drawn into threads. In the first case, it crystallizes; in the second, it does not. This state of softness is probably connected with the viscidity; which, when the cold is suddenly applied, prevents the possibility of the particles arranging themselves in regular order. If sulphur be melted in a ladle, or oval vessel, and, as soon as its surface begins to congeal, the liquid portion beneath the surface be poured out, the internal cavity will exhibit long, needle-shaped crystals. Alcohol, sulphuric ether and the oils dissolve a small portion of sulphur. It combines in five proportions with oxygen, and forms five compounds, which have received the names of *sulphuric acid*, *sulphurous acid*, *hyposulphurous acid*, *subsulphurous acid*, and *hyposulphuric acid*. We shall describe the *sulphurous acid* first. It is formed when sulphur is burnt, either in the open air or in oxygen gas. But the way in which it is usually obtained for experiment, is to heat a mixture of sulphuric acid and mercury in a small retort; a gas is evolved, which is sulphurous acid. It is colorless, is possessed of an exceedingly suffocating and disagreeable smell, precisely similar to that of burning sulphur. Its taste is intensely acid and sulphureous. It converts vegetable blues to red, and then gradually destroys them. Its specific gravity is 2.2293. The gas may be collected over mercury. or received into water, which, at the temperature of 61°, will absorb thirty-three times its bulk, or nearly an eleventh of its weight. It consists of sulphur 50 and oxygen 50. It is used in bleaching, particularly for silks: it likewise discharges vegetable stains and iron moulds from linen. In combination with the salifiable bases, it forms sulphites, which differ from the sulphates in their properties. The alkaline sulphites are more soluble than the sulphates; the earthy, less so. They are converted into sulphates by an addition of oxygen, which they acquire even by exposure to the air. By putting sulphuric acid and mercury into the sealed end of a recurved glass tube, then sealing the other end, and applying heat to the former, a liquid sulphurous acid may be obtained: it remains in a liquid state in the air at 0° Fahr.: it is colorless, transparent, and very volatile; specific gravity 1.45. It boils at 14°; but, in consequence of the cold produced by the evaporation of the portion that flies off, the residue remains liquid. It causes a feeling of intense cold when dropped on the hand.

Sulphuric acid is obtained by burning a mixture of about seven parts sulphur, and one part nitre, in large chambers, lined with lead. By this combustion, sulphurous acid and deutoxide of nitrogen are formed. The deutoxide absorbs oxygen from the atmosphere, and is converted into nitrous acid. Both the acids are absorbed by water. The nitrous acid gives out part of its oxygen to the sulphurous acid, and converts it into sulphuric acid; and, being reduced to the state of deutoxide, again flies off, unites to oxygen, is converted to nitrous acid, and absorbed by the water. This process goes on till the whole of the sulphurous acid is converted into sulphuric acid. The water, thus acidulated, is evaporated in leaden vessels to a certain point. The evaporation is then continued in glass retorts, till the acid acquires the requisite degree of strength. The ordinary form of a sulphuric acid lead chamber is the parallelopiped, and its dimensions about seventy feet long, ten or twelve high, and sixteen wide. At the middle height of one end, a small oven is built up, with a cast-iron sole, having a large lead pipe, ten or twelve inches in diameter, proceeding from its arched top into the end of the lead chamber. On the sole the sulphur is burned; the combustion being aided, when necessary, by heat applied from a little furnace below it. Above the flaming sulphur, a cast-iron basin is supported in an iron frame, into which the nitre, equal to one tenth of the sulphur, is put, with a little sulphuric acid. The combustion of the sulphur is regulated by a sliding door on the oven. In the roof of the remote end of the large chamber, a small orifice is left for the escape of the atmospheric nitrogen, and other incondensable gases. This apparatus is used for the continuous process; but there is another, or that of the intermitting combustion, which is worthy of notice. Large flat trays, containing the sulphur and nitre, are introduced into the interior of the chamber, or into the oven, and fire is applied to the materials. When the sulphur is burned, and the chamber filled with sulphurous and nitrous acids, the steam of water is thrown in, in determinate quantity, by a small pipe at the side. This causes a tumultuous motion among the gases and the atmospheric oxygen, which favors the mutual reaction. As the steam condenses, the sulphuric acid falls with it. After some time, the chamber is aired by opening valves of communication with the external atmosphere. The operation is then commenced anew. Sulphuric acid was formerly obtained by distillation from sulphate of iron; sixty-four pounds are yielded by six hundred pounds of the sulphate of iron. The following are the properties of pure sulphuric acid. It is colorless, has somewhat of an oily or glutinous consistency, and hence the ancient name of *oil of vitriol*. It speedily chars animal and vegetable substances, when placed in contact with them. It converts vegetable blues to red, and is possessed of an exceedingly acid taste. Acid of the specific gravity 1.85, boils at the temperature of 620°. The boiling point diminishes with the strength. Acid of the specific gravity 1.78, boils at 435°, and acid of the specific gravity 1.65, at 350°. The quantity of water present in one hundred parts of concentrated and pure sulphuric acid is very nearly 18.46. It consists of three proportionals of oxygen, one of sulphur, and one of water; and by weight, therefore, of 3.0 oxygen + 2.0 sulphur + 1.25 water, which equals 6.125, which represents the combining weight of the concentrated sulphuric acid; while $3 + 2 = 5$, which is the equivalent of the dry acid. Sulphuric acid strongly attracts water, which it takes from the atmosphere very rapidly, and in larger quantities if suffered to remain in an open vessel—imbibing one third of its weight in twenty-four hours, and more than six times its weight in a year. If four parts by weight be mixed with one of water at 50°, they produce an instantaneous heat of 300°; and four parts raise one of ice to 212°. On the contrary, four parts of ice mixed with one of acid, sink the thermometer to 4° below 0. It requires a great degree of cold to freeze it; and, if diluted with half a part or more of water, unless the dilution be carried very far, it becomes more and more difficult to congeal; yet, at the specific gravity 1.78, it may be frozen by surrounding it with melting ice. Its congelation forms regular prismatic crystals, with six sides. All the simple combustibles decompose sulphuric acid with the assistance of heat. At about 400°, sulphur converts sulphuric acid into sulphurous acid. Several metals at an elevated temperature decompose this acid, with evolution of sulphurous acid gas, oxidizement of the metal, and combination of the oxide with the undecomposed portion of the acid. Sulphuric acid is of very extensive use in chemistry, as well as in metallurgy, bleaching, and some of the processes for dyeing. In medicine, it is given as a tonic and stimulant, and is sometimes used externally as a caustic. The combinations of this acid with the various bases are called sulphates, and constitute a very important class of salts; for an account of which, see their respective bases.—*Subsulphurous acid*. It has been found, that sulphurous acid has the property of dissolving iron, without the evolution of any gas. The acid gives out half its oxygen to the iron, and converts it into the protoxide of iron, which combines with the acid in question, and which consists of half the oxygen found in sulphurous acid. When the salt is decomposed, the subsulphurous acid is resolved into sulphurous acid and sulphur. It seems incapable of existing except in combination with a base. When insulated, half the sulphur separates, and sulphurous acid remains.—The *hyposulphurous acid* also seems incapable of existing except in combination with a base. When sulphuric acid in a slight excess is poured into a dilute solution of hyposulphite of strontites, the whole strontites is thrown down, and the filtered liquid consists chiefly of a solution of hyposulphurous acid in water. This liquid is transparent and colorless, is destitute of smell, and has an acid, astringent, and very bitter taste. On standing a few hours, it undergoes spontaneous decomposition, the liquid becomes milky, sulphur is deposited, and sulphurous acid remains in so lution.—*Hyposulphuric acid.* By causing a current of the sulphurous acid gas to pass through black oxide of manganese, suspended in water, a neutral salt is formed, which, when dissolved, consists of a mixture of neutral sulphate and hyposulphate of manganese. By pouring into this solution barytes water, the whole of the sulphate of manganese is thrown down, while the hyposulphate is converted into hyposulphate of barytes, which remains in solution. A current of carbonic acid throws down any excess of barytes that may have been added; and then, by evaporating the liquid, the hyposulphate of barytes is obtained in crystals. These crystals are dissolved in water, and the barytes they contain precipitated, by means of sulphuric acid; care being taken not to add the sulphuric acid in excess. The liquid now consists of water holding hyposulphuric acid in solution. This acid is colorless and destitute of smell. It may be concentrated till its specific gravity is 1.347. It then begins to be decomposed by heat, sulphurous acid flies off, and sulphuric acid remains behind. It is found that it can be completely resolved into sulphurous and sulphuric acids, in the proportion of four parts of the former to five parts of the latter. Thus we know five compounds of oxygen and sulphur, all of which are acids. Their names, constituents, and combining weights, are as follows:

	Sulphur.		Oxygen.	Combining Weight.
1. Hyposulphurous acid,	2 atoms	+	1 atom	5
2. Subsulphurous acid,	1	+	1	3
3. Sulphurous acid,	1	+	2	4
4. Sulphuric acid,	1	+	3	5
5. Hyposulphuric acid,	2	+	5	9

Sulphur combines readily with chlorine, forming a liquid compound called *chloride of sulphur*. It is formed by passing a current of chlorine through flowers of sulphur, or by heating sulphur in a dry glass vessel, filled with chlorine gas. Its color is brownish-red, and it possesses an odor similar to sea-plants. Its taste is acid, hot and bitter. It does not change the color of litmus paper; specific gravity 1.67. When dropped into water, it is decomposed, sulphur being evolved. It is composed of sulphur 2 and chlorine 4.672. By pouring bromine on flowers of sulphur, an analogous compound is formed, called *bromide of sulphur*. Cold water has but little action on it, but, at a boiling temperature, a slight detonation takes place, and hydrobromic acid is formed, together with sulphuric acid and sulphureted hydrogen. It consists of bromine 10 and sulphur 2. Sulphur has the property of combining with iodine, and of forming a compound called *iodide of sulphur*. It is easily formed by mixing together the two constituents in a glass tube, and exposing them to a sufficient heat to melt the sulphur. It is of a grayish-black color, and has a radiated texture. It has not been analyzed. Sulphur has the property of combining with hydrogen, and of forming a gaseous compound, which has received the name of *sulphureted hydrogen*. It has also been called *hydrosulphuric acid*. It may be obtained by pouring sulphuric or muriatic acid upon several metallic sulphurets. Sulphuret of iron is commonly employed, and may be formed by heating together iron filings and sulphur in a covered crucible. Sulphureted hydrogen gas is colorless, and has a strong, fetid smell, not unlike that of rotten eggs. It does not support combustion, nor can animals breathe it without suffocation. Its specific gravity is 1.1805. It is rapidly absorbed by water,—100 cubic inches of this liquid absorbing 308 cubic inches of sulphureted hydrogen. The water thus impregnated is colorless, but it has the smell of the gas; and a sweetish, nauseous taste. It converts vegetable blue colors to red. When the gas is mixed with common air, it burns rapidly, but does not explode. When three volumes of sulphureted hydrogen gas, and two volumes of sulphurous acid gas, both dry, are mingled over mercury, they unite together, and are condensed into a solid body, which adheres firmly to the sides of the vessel. To this compound, which possesses acid properties, the name of *hydrosulphurous acid* is applied. Its taste is acid and hot; and it leaves an impression in the mouth, which continues for some time. It requires a greater heat to produce fusion than sulphur. Another compound of sulphur and hydrogen, called *bisulphuret of hydrogen*, is formed as follows: Carbonate of potash is fused with an excess of sulphur in a covered crucible, by which a sulphuret of potash is formed. A concentrated solution of this sulphuret is poured, by little and little, into dilute muriatic acid, which gives rise to a yellow, oily-looking liquid, which collects at the bottom of the vessel. This liquid is the bisulphuret of hydrogen. It cannot be kept, for it undergoes spontaneous decomposition even in well-closed vessels, being converted into sulphur and sulphureted hydrogen. Sulphur has the property of combining with carbon, and of forming a very remarkable compound, called *bisulphuret of carbon*. It is formed as follows:—Fill a porcelain tube with charcoal, and make it pass through a furnace in such a way, that one end shall be considerably elevated above the other. To the lower extremity lute a wide glass tube, of such a length and shape, that its end can be plunged to the bottom of a glass bottle filled with water. To the elevated extremity lute another wide glass tube, filled with small bits of sulphur, and secured at the further end, so that the sulphur may be pushed forward by means of a wire, without allowing the inside of the tube to communicate with the external air. Heat the porcelain tube, and, consequently, the charcoal which it contains, to redness, and continue the heat, till air bubbles cease to come from the charcoal; then push the sulphur slowly, and piece after piece, into the porcelain tube. A substance passes through the glass tube, and condenses, under the water of the bottle, into a liquid. This liquid was obtained by Lampadius in 1796, and described under the name of *alcohol of sulphur*. It is as transparent and colorless as water; its taste is acid, pungent, and somewhat aromatic; its smell is nauseous and fetid, though quite peculiar; specific gravity 1.27. It boils at 105°, and does not congeal when cooled down to 60°. It is one of the most volatile liquids known, and produces a greater degree of cold by its evaporation than any other substance. It takes fire in the open air, at a temperature scarcely above 620°. It is scarcely soluble in water; but alcohol and ether dissolve it readily. It is composed of sulphur 84.83 and carbon 15.17. Bisulphuret of carbon was found by doctor Brewster to exceed all fluid bodies in refractive power. In dispersive power, it exceeds every fluid substance except oil of cassia, holding an intermediate place between phosphorus and balsam of Tolu. Sulphur combines with *boron*, *silicon* and *phosphorus*, and forms *sulphurets* of these substances. (For an account of the sulphurets of the metals, see the different metals.)

SULPHURIC ACID. (See *Sulphur*.)

SULTAN, in Arabic, signifies *mighty*. The Turkish emperor is called *sultan*, or *grand sultan*, although the title of *padishah* (q. v.) is more dignified. The princes of the family of the khan of the Crim Tartars are also styled *sultan*. The pacha of Egypt is likewise honored with this title, by the inhabitants of the country, but not at the court of Constantinople. In common life, every person is addressed, out of civility, as *sultanum* (my lord). The Europeans also call the wives of the sultan, *sultanas;* but the Turks call them merely first, second, or third wife, &c. The first is she who first bears a son to the sultan. She is likewise called by Europeans the *favorite sultana*. She has the precedency of all the women of the seraglio, unless her son dies before the sultan, and another of the wives has a son older than any of hers surviving. The title of *sultana* is applied properly only to one of the wives, who is actually declared wife and empress; but this is rarely done, on account of the expense of a second court, which would be necessary. At Constantinople, only the daughters of the sultan are called *sultanas;* and they retain this title even after marriage with the officers of the sultan. The daughters of such a marriage are termed *kanum sultanas* (ladies of the blood). If the mother of the sultan is living, she is styled *Walidet-sultana*, or *sultana Valide*. She is treated with great respect, and her son cannot choose a new wife or concubine without her consent. (See *Harem*.) *Sultana* is also the name of a Turkish ship of war, carrying about sixty-six guns, with 800 men.

SUMACH (*rhus*); a genus of plants, belonging to the natural family *terebinthaceæ*, consisting of shrubs or small trees, with small, inconspicuous flowers, disposed in racemes or panicles, and leaves usually pinnate, somewhat resembling those of the walnut, but in some species ternate or simple. More than seventy species are known: all have a lactescent juice, more or less acrid, and containing a gum-resin.—*R. coriaria* is found in the countries about the Mediterranean. The young branches, dried and powdered, were used by the ancients for tanning leather; and at the present time, in some parts of Spain and Italy, the black morocco is chiefly prepared with this plant. The roots contain a brown, and the bark a yellow dye. The seeds are in common use at Aleppo, at meals, to provoke an appetite. Both leaves and seeds are used in medicine, as astringent and styptic.—*R. typhina* is a shrub, twelve or fifteen feet high, common in the northern parts of the U. States. The young branches are thick, and covered with a dense coating of hairs; hence the common name of *stag's horn sumach*. The leaves are pinnate, and composed of eleven to fifteen serrated leaflets. The flowers are small and numerous, disposed in an upright hairy panicle, and are succeeded by small berries, which finally turn red, and render this shrub a conspicuous object in the woods. It has been long cultivated in the European gardens for ornament. The berries possess the same properties as those of the preceding, and a very abundant milky juice flows from the bark. This last is pulverized, and employed for tanning.—*R. glabra* precisely resembles the preceding in habit, and is only distinguished by the smoothness of the leaves and young shoots. It extends farther south, and is common in the Middle States; often overrunning land left for a few years in pasture. The berries dye red, and the branches boiled with the berries afford a black, ink-like tincture. It is likewise cultivated for ornament, in the European gardens, and possesses the same properties as the preceding.—*R. pumila* is a low, pubescent species, from the mountains of Carolina, which is said to [illegible] most poisonous of the genus.—*R.* [illegible]*a*, commonly called *dog-wood* or [illegible] *sumach*, is not uncommon in the Northern and Middle States. It attains the height of twelve to twenty feet. The leaves are smooth and entire; the flowers greenish-white, disposed in loose panicles, and succeeded by whitish berries. The poisonous qualities of this plant are well known. Some persons are affected by touching or smelling any part of it, or even by coming within a certain distance; while others appear to be entirely exempt from its influence. When the poison has been communicated, inflammation appears on the skin, in large blotches, in a day or two; soon after, small pustules rise in the inflamed parts, and fill with watery matter, attended with intolerable itching and burning, and lasting several days.—*R. copallina* is abundant in sandy soil, in many parts of the Middle and Southern States. It is easily distinguished by the leafy expansion on each side of the common petiole. The flowers are greenish-yellow, and are disposed in panicles at the extremities of the branches.—*R. radicans*, often called, in this country, *poison ivy*, is a climbing, woody vine, which adheres to the trunks and branches of trees, by means of root-like suckers. The leaves are ternate, and the flowers are disposed in little axillary racemes. It is common in the Northern and Middle States, and affects certain individuals in the same manner as the poison sumach; but it seems to be less virulent, and fewer persons are exposed to its influence.—*R. aromatica* differs widely in habit from the others. It is a small shrub, with ternate leaves, having the flowers disposed in aments, which grows chiefly on the Alleghanies, and in the Western States. The berries are hairy and red. The celebrated Japan varnish is obtained from a species of *rhus*, which was formerly considered identical with our poison sumach; but now is recognised as a distinct species, having the under surface of the leaves downy and velvety. This varnish oozes from the tree, on its being wounded, and grows thick and black when exposed to the air. It is so transparent, that when laid pure and unmixed upon boxes or furniture, every vein of the wood may be clearly seen. With it the Japanese varnish over the posts of their doors and windows, their drawers, chests, boxes, cimeters, fans, tea cups, soup-dishes, and most articles of household furniture made of wood.

Sumarokoff, Alexander Petrowitsch, a distinguished Russian tragic poet, who formed himself on French models, was born in 1718, and died at Moscow in 1777. His tragedies, in point of harmony, taste, and purity of style, are compared to those of Racine, though inferior in poetical inspiration. His principal works are Sineus and Truwor (which appeared in 1755), Semire, Jaropolkund Deinise, Korew and Aristone; all of which were translated into French in 1801. He also wrote Hamlet, Ritschelas, and the Pseudo-Demetrius. The last is considered his best work (translated into French in 1800, also into English). Sumarokoff also wrote comedies, fables and epigrams.

Sumatra; an island in the eastern seas, the largest and most westerly of the Sunda islands, separated from the continent by the straits of Malacca, and from Java by the straits of Sunda. It is divided obliquely by the equator into almost equal parts, and its general direction is from N. W. to S. E.; lat. of one extremity 5° 56′ N., of the other 5° 56′ S. It is about 1000 miles long, and 165, on an average, broad; square miles, about 160,000. A chain of high mountains runs through the whole extent of the island, and the ranges are, in many parts, double and treble. Mount Ophir, immediately under the equinoctial line, is supposed to be the highest visible from the sea, its summit being elevated 13,842 feet above that level. Among the ridges of mountains are extensive plains of great elevation, and of temperate climate, the most valuable and best inhabited portion of the island. Here, too, are found many large and beautiful lakes. The ridges of mountains lie towards the western shore; in consequence, all the greatest rivers are found on the eastern side. The climate varies with the height of the ground; but on the plains, the heat is not so great as might be expected from the position; the thermometer, in the greatest heat, about two o'clock P. M., generally fluctuating from 82° to 85°: at sunrise, it is usually as low as 70°. The soil is generally fertile; the population for the most part thin; and a great portion of the island is covered with an impenetrable forest. The most important article of cultivation is rice, of which there are many different species. Of articles of commerce, the most abundant is pepper, formerly obtained in greater quantities than at present. Other productions are, gum-benzoin, camphor, cassia, cotton, coffee, &c. The upas (q. v.) tree, and the gigantic rafflesia (q. v.), are among the vegetable curiosities. It is rich in mineral and fossil productions; has long been famous for gold, which is still procured in considerable quantities; and has mines of iron, copper, and tin. It produces a great variety and abundance of fruits, and wild animals, as elephants, tigers, rhinoceroses, alligators, &c.; also birds of various kinds. The inhabitants are rather below the middle size: their limbs are for the most part slight, but well shaped. The women flatten the noses and compress the skulls of children newly born; and the males destroy their beards. The inhabitants have made but little progress, generally, in the arts of industry, though they excel in some particular manufactures. The Malay language is every where spoken along the coasts of Sumatra. (See *Malays.*) Among the modern political divisions of the island, the principal are the empire of Menancabow and the Malays, the Achineese (see *Acheen*), the Battas (q. v.), the Rejangs, and the people of Lampong. The Dutch first began to form settlements on the coasts in 1666, and in 1685, the English also established themselves at Bencoolen. (q. v.) In 1825, the presidency of Bencoolen, of which the capital was Fort Marlborough, was ceded to the Dutch, in return for Malacca. (q. v.) The latter were already in possession of Padang, a strong fortress on the western coast, and of Palembang (25,000 inhabitants), on the eastern coast. Previous to the late revolution in the Netherlands, they were making preparations to reduce the whole island. Sir Thomas Stamford Raffles (q. v.) was the first European who penetrated to the interior of the island, which he crossed from Bencoolen to Palembang. See Marsden's *History of Sumatra*, and Anderson's *Mission on the East Coast of Sumatra* (Edinb., 1826, 2 vols.).

Summer; in the northern hemisphere, the season comprehended in the months of June, July, and August; the warmest period of the year. South of the equator, the summer corresponds, in time, to our winter. The entire year is also sometimes divided into the summer, or warm season, and the winter, or cold season. The astronomical summer begins, in the northern hemisphere, when the sun has reached its greatest northern elevation,—therefore about June 21,—and ends when it crosses the equator the second time in the year, about September 23. Notwithstanding the changes in the signs of the ecliptic, produced by the precession (q. v.) of the equinoxes, the ancient signs of summer have remained in the calendar. In the northern hemisphere, they are Cancer, Leo, Virgo; in the southern, Capricorn, Aquarius, Pisces. Our summer takes place at the time when the earth is at the greatest distance from the sun, and hence moves the slowest. The diameter of the sun, therefore, appears considerably smaller at this season than in winter, and the summer of the northern hemisphere has ninety-three and a half days,—a few days more than the winter,—and, therefore, more than the summer of the southern hemisphere. Notwithstanding the greater distance of the sun in summer, his rays have much more effect than in winter, because they fall more directly upon the northern hemisphere. He also rises much sooner, and sets much later, and, therefore, describes a much greater arc in the heavens than in winter. At the time when he has reached the tropic of Cancer, he ascends highest in the heavens, and remains longest above the horizon; and we might, therefore, suppose that this would be the period of the greatest heat. But experience shows that the greatest heat generally takes place in August, throughout the whole northern hemisphere, far beyond the polar circle. The reason of this circumstance is, that, in August, the influence of the sun's rays has been felt for a long time on the earth, and that, within the polar circle, as far as to the tenth or twelfth degree from the pole, the ice has been thawed and the temperature of the air moderated; hence the wind which blows from those northern regions to the south is milder.—See Meyer's *Manual of Physical Astronomy, Theory of the Earth*, and *Meteorology* (German, Göttingen, 1805).

Sumter, Thomas, a distinguished partisan officer, during the American revolutionary war, died June 1, 1832, at his residence, near the Bradford springs, South Carolina, after a short illness, in the ninety-eighth year of his age. In the commencement of his military career, he was severely tried by adversity, and acquired such circumspection and prudence, that the enterprises which he subsequently conducted were, for the most part, crowned with brilliant success. He gave the first check to the success of the British in South Carolina, after the fall of Charleston, in 1780. The affairs of the state then wore the most gloomy aspect; the citizens were in the deepest despondency, and had abandoned all hope of further resistance, when colonel Sumter, at the head of a small band of followers, who had been forced to retreat, returned to the state, raised again the standard of opposition, and revived and maintained the spirits of the people by a series of gallant achievements. He first routed, July 12, 1780, at Williams's plantation, a marauding detachment of the enemy's army, commanded by captain Huck, a miscreant who had excited universal abhorrence by his cruelty and profanity. In the same month, he made attacks on the posts of Rocky mount and Hanging rock, the first of which was completely successful, as would have been the second, also, could he have restrained the insubordination of his troops, and destroyed their avidity for plunder and liquor. He destroyed, however, the prince of Wales's regiment. Soon after, he captured a convoy of stores passing from Ninety-Six to Camden; but, unfortunately, encamping within striking distance of the enemy, he was surprised by Tarleton, and routed, with the loss of many men and all the prisoners and stores that had recently fallen into his hands. He was next attacked near Broad river by Wemyss, who was repulsed, and he himself wounded and taken. Major Garden, in his Anecdotes of the Revolution, states, that lord Cornwallis wrote, immediately after this, to Tarleton, "I shall be glad to hear that Sumter is in no condition to give us further trouble; he certainly has been our greatest plague in this country." He was accordingly attacked by Tarleton, in his strong position on Blackstock hill, with the usual impetuosity of that officer, who, however, was compelled to retreat, with a severe loss, leaving his wounded to the mercy of the victor. In this action, Sumter received a severe wound, which, for a considerable time, arrested his career; but he was no sooner able to take the field, than he again appeared as an active partisan, breaking up the British posts in the lower country. About this period, he was promoted to the rank of brigadier-general. On one occasion, lieutenant-colonel Hampton, commanding under him, dispersed a large body of tories, near Dorchester. Placed at the head of the light troops, both regulars and militia, Sumter next compelled lieutenant-colonel Coats to destroy his stores, at Monk's corner, and abandon his position. Important services were again performed by Sumter at Eutaw, after which, the enemy, retiring within their lines, seldom ventured beyond the gates of Charleston. General Sumter was for a long time a member of the American congress, first as a representative, and then a senator, and enjoyed the highest respect. He is thus described in Lee's Memoirs:—"Sumter was younger than Marion, who was about forty-eight years of age, larger in frame, better fitted, in strength of body, to the toils of war, and, like his compeer, devoted to the freedom of his country. His aspect was manly and stern, denoting insuperable firmness and lofty courage. Determined to deserve success, he risked his own life and the lives of his associates without reserve."

Sun. This magnificent luminary, the great source of light, heat, and life, appears to us a circular and resplendent disk; from which appearance, and the observation of the solar spots (described below), it follows that this body has a form nearly spherical, and turns round its axis once in about twenty-five and a half days, because a sphere only can appear to the eye like a circular disk in all positions. The true relation of the sun, not only to our earth, but to all the planets of our system, has been known since the discoveries of Kepler. The primary planets, accompanied by their moons, revolve about the sun in elliptical orbits, which have but little eccentricity the sun itself being situated in a focus common to all these ellipses. His mean distance from the earth, which has been finally determined, with tolerable accuracy, by the observation of his parallax (see the subsequent part of this article), amounts, in round numbers, to about 95,000,000 miles: the sun, therefore, is above 400 times farther distant from us than the moon; and a cannon ball which moves 600 feet in each second, would require about 26 years to reach it. The apparent diameter of the sun is pretty nearly the same as that of the moon: it is somewhat above half a degree; yet, according to the various points of the earth's orbit, from which we observe the same, varies somewhat—a necessary consequence of the elliptical form of this orbit. The conclusions which we draw from the differences in the apparent magnitude of the sun as to the different distances of this body from the earth, agree perfectly with what we learn, respecting the same subject, from other sources; so that this point may be considered as well settled. The mass of the sun, which exceeds that of all the planets together 800 times, is, in proportion to that of our earth, according to Piazzi, as 329,630 to 1; the diameter exceeds that of the earth 112 times, the surface 12,700 times, the solid contents 1,435,000 times. The earth appears, as Biot says, by this statement, a mere grain of sand, compared to the sun, which, again, in his turn, is but a point in infinite space. Respecting the physical structure of the sun, astronomers have entertained different opinions, from times immemorial. The hypothesis of Herschel is, that the sun is an opaque body, having on its surface mountains and valleys, like the earth, the whole surrounded by an atmosphere constantly filled with luminous clouds. These sometimes open in particular places, and allow the body of the sun to be seen; hence the appearance of solar spots. This hypothesis seems to be preferable to that of Laplace (who imagines the sun to be a burning body), because it allows us to conceive that the sun is inhabited, which better agrees with the wise use made of space by a beneficent Omnipotence.

Parallax of the Sun.—Parallax and horizontal parallax have been explained in the article *Parallax*. The horizontal parallax of the sun has been known with greater accuracy since the transit of Venus over the sun's disk in 1761 and 1769. As the orbit of the earth includes that of Venus, the latter must sometimes appear between us and the sun. The duration of such a transit for the centre of the earth may be calculated; and on comparing this with the duration actually observed on the surface of the earth, the difference of the two results enables us to deduce the horizontal parallax of the sun, and hence the distance of the two luminaries from each other. In this way the mean horizontal parallax of the sun has been estimated by Duréjour at 8′ 8″, and by Biot at 8′ 7″, which makes the mean distance of the sun from the earth amount to 23,439 times the radius of the earth (which is about 4000 miles in length), or, in round numbers, 94,000,000 miles. If this horizontal parallax is taken but one tenth of a second smaller, we must add to this distance an amount equal to 215 times the radius of the earth, which explains the difference in the statements of the distance. This distance having been ascertained with tolerable accuracy, we possess the measure of our whole planetary system, as, according to the second law of Kepler (q. v.), the cubes of the mean distances of the planets from the sun are as the squares of the periods of their revolutions (which have long been known). Therefore the determining of this distance is of the highest importance. Respecting the transit of Venus, see Lalande's *Astronomie*, Enke's *Distance of the Sun from the Earth, by the Transit of Venus in* 1761, *and the Transit of Venus in* 1769 (in German). (See *Transit.*)

Spots on the Sun.—Spots of irregular form are often observed in the disk of the sun (q. v.), in greater or less number. They appear in the centre dark, and towards the margin have a whitish-gray umbra, which, however, is often observed spreading over large surfaces, without that black centre. They originate and disappear, sometimes quickly, and without apparent cause, in the middle of the disk; but more frequently are observed to rise on the eastern margin, and move towards the western, where, thirteen days after being first seen, they disappear, and again appear on the eastern margin after a little longer period. The spots appear to revolve round the sun in about twenty-seven days. At particular seasons, they move over the sun in straight lines; at all other times, in lines more or less curved; and the paths described by different spots observed at the same time are always parallel to each other, and always have their curvature and position determined by the season. They appear broadest when near the middle point of their passage. All this is satisfactorily explained, if the spots are considered to adhere to the sun, and the latter is considered to turn according to the order of the signs round its axis, which is inclined at an angle of 82¼° to the ecliptic of the earth. The real duration of this rotation, as deduced from the apparent rotation of twenty-seven days, is equal to twenty-five days. This difference is occasioned by the fact that the earth, from which this rotation is observed, is itself moving in the mean time. Herschel's opinion on the nature of these spots we have mentioned in the previous part of this article.

SUN-DIAL. (See *Dial.*)

SUNDA ISLANDS; a group of islands lying to the south of Farther India. The principal islands of the group are Sumatra, Borneo and Java. (See the articles.) The *straits of Sunda* lie between Sumatra and Java.

SUNDAY; the first day in the week, which has its name from the *sun*, as this day was already called *dies solis* with the Romans. It is celebrated by Christians in commemoration of Christ's having risen on the first day of the week. It was also on the first day of the week that the Holy Ghost was poured out upon the disciples. We have given a history of the Christian Sunday under the article *Sabbath*, and shall here only refer the reader, for more information on some points, to Hallam's *Constitutional History of England* (ch. vii. viii.). In the church services of Europe, the Sundays are named from the feasts which precede them, or from the collects or passages of Scripture with which the religious service was formerly commenced on the several Sundays:—1. *Sunday after New Year*, so called when new year begins on one of the four last days of the week. 2. *Sundays after Epiphany*, which vary from one to six, according to the time of Easter. 3. *Septuagesima* (q. v.), *Sexagesima*, and *Esto mihi* (in the English church, *quinquagesima* (q. v.) *Sunday*). The third has its Latin name from the beginning of the lesson of the day (Psalm lxxi, 3). 4. *Sundays in Lent.* (q. v.) Their names are taken from the words with which the lessons of the day begin: *Invocavit* (Psalm xci, 15); *Reminiscere* (Psalm xxv, 6); *Oculi* (Psalm xxv, 15); *Lætare* (Isaiah lxvi, 10); *Judica* (Psalm xliii, 1); *Palmarum*, Palm Sunday. (q. v.) 5. *Sundays after Easter*, six in number, which almost all have names of rejoicing: *Quasimodogeniti* (1 Peter ii, 2), or Whitsunday (see *Pentecost*); *Misericordias Domini* (Psalm xxiii, 6, or Psalm lxxxix, 2); *Jubilate* (Psalm lxvi, 1); *Cantate* (Psalm xcvi, 1); *Rogate* (Matt. vii, 7); *Exaudi* (Psalm xxvii, 7). 6. *Sundays after Trinity.* The feast of Trinity was established in 1150. The greatest number of these Sundays is twenty-seven: the number depends upon the time of Easter. The later Easter falls, the more Epiphany Sundays and the fewer Trinity Sundays are there. 7. *Sundays in Advent.* (See *Advent.*) 8. *Sunday after Christmas*, so called when this festival falls upon one of the first four days of the week, reckoned from Monday. (See *Festivals.*) In the English church, the sixth Sunday after Easter is called *Sunday after Ascension*, and the seventh *Whitsunday*.

SUNDAY LETTER. (See *Dominical Letter.*)

SUNDAY SCHOOLS. The founder of the modern Sunday schools was Mr. Raikes (q. v.), editor of the Gloucester (England) Journal. Struck with the wretched appearance of a number of children whom he saw playing in the street in the suburbs, he was informed by an inhabitant to whom he addressed himself, that on Sundays, when they were released from work, and the few who enjoyed the benefit of any instruction during the week, were let loose from school, they presented a more afflicting sight of misery and vice. This observation immediately suggested to him the idea that the profanation of the day might be prevented by putting them to school; and he engaged several women, who kept schools in the neighborhood, to receive such children as he should send to them on Sundays, and instruct them in reading and the catechism, paying each of them a shilling for their day's work. He soon collected a considerable number of children, distributed books among them, gave them advice, settled their quarrels; and the effects of his benevolent exertions were so striking, that his example was followed by other charitable persons in different quarters of the city; and in a few years Sunday schools were established in almost every part of England. Mr. Raikes made his first experiment in 1781, and, in 1786, it was estimated that 250,000 children were receiving instruction in Sunday schools. (See a letter of Mr. Raikes, giving an account of his proceedings, in the Gentleman's Magazine, vol. liv, p. 410, 1784.) A Sunday school society was formed in 1785 for the encouragement of Sunday schools by pecuniary aid, &c., the schools having been at first taught by hired teachers. Gratuitous instruction was a great improvement in the system, and appears to have become general about 1800. In 1803, the first Sunday school union was formed in London, and the example was soon imitated in many large towns and some of the counties. In 1826, the number of Sunday schools in England under the care of the established church was about 8000, with 550,450 pupils: the number of those established by dissenters is also very great. The Scotch Sabbath evening schools (first established in Edinburgh in 1787) arose from the English Sunday schools, but are modified by the circumstance that, as nearly all the children in that country are taught to read in the parochial schools, the Sabbath evening schools are more entirely devoted to direct religious instruction than the Sunday schools. In this country, the first Sunday schools were opened at New York, in 1816; and they have since multiplied rapidly, and overspread the whole country.

Sunderbunds; an extensive, woody, inhospitable district of Hindoostan, intersected by the mouths of the Ganges, in the south part of the country of Bengal. This district is about 10,000 square miles in extent, and is intersected by innumerable rivers and creeks, all of which are salt; and through the whole tract nothing but brackish water is found; and it is generally uninhabited, except by tigers and deer. The navigation by boats through the Sunderbunds is very romantic, and boats coming down to Calcutta in the hot season are obliged to take this route. The trees are all of small size, not useful for timber, but very valuable in affording a supply of fuel for Calcutta and other towns on the river.

Sunderland; a market-town and seaport of England, county of Durham, near the mouth of the Wear. Here the malignant cholera made its first appearance in England in 1831. With Monk Wearmouth and Bishop Wearmouth, it forms one connected town. The High street is spacious, and tolerably handsome, especially the central part, which rises with a considerable ascent. Some of the other streets are narrow and dirty; but of late years the general appearance of the town has been improved. Of its public buildings, the church, a chapel of ease, a Methodist chapel, and meeting-houses for the Presbyterians, Independents, Baptists, Quakers, and Unitarians, the exchange, &c., are the principal. The harbor is formed by two piers, on the south and north sides of the river. The iron bridge consists of an arch of iron frame-work, thrown over the river, 237 feet span, and rising 100 feet above the level of the water; so that ships of 400 tons can sail under it, by striking their top-gallant masts. The trade of Sunderland has been long on the increase. Coal is the staple article of export, employing 600 craft. The manufactures are chiefly of flint and bottle glass, earthen ware, copperas. Coal is the staple article of export. Ship-building is carried on to a great extent. By the reform bill it returns, with the Wearmouths, two members to parliament. Population of the whole town in 1821,33,911. 267 miles north from London.

Sun-Dew (*drosera*). These delicate plants are found in marshes and moist places. They attract attention chiefly from their leaves, which are all radical, and fringed with hairs, each of which supports a globule of pellucid, dew-like liquor, even in the hottest weather. The flowers are small, and mostly white; but in one North American species, they are conspicuous, and of a fine purple color. These plants are remarkable for having the unexpanded leaves rolled up in the same manner as the ferns—a disposition almost unique among phænogamous plants. The most common species, *D. rotundifolia*, is an acrid, caustic plant, which curdles milk, removes warts and corns, and takes away freckles and sunburn: distilled with wine, it produces a very stimulating spirit; and it was formerly much used as a tincture, spiced and sweetened.

Sun-Fish (*orthagoriscus*); a cartilaginous fish of a very singular form: the body is compressed, broad, abruptly truncated, resembling, in fact, the head of a large fish separated from the body: the mouth and eyes are very small. Its nearly circular form, and the silvery whiteness of the sides, together with their brilliant phosphorescence during the night, have obtained for it very generally the appellations of sun or moon-fish. While swimming, it turns upon itself like a wheel. It grows to an immense size, often attaining the diameter of four feet, and sometimes even that of twelve, and weighing from three to five hundred pounds. It is very fat, and yields a great quantity of oil; but the flesh is ill tasted, and exhales a disagreeable odor. It is found in all seas, from the arctic to the antarctic circle. Two or three species are known. In the U. States, the same name is often applied to a fish of the perch family (*pomotis*), of a compressed and elevated form, very common in most of our lakes and rivers. The genus *pomotis* is peculiar to North America, and several species are now known.

Sun-Flower (*helianthus*); a genus of plants, so called from the ideal resemblance of the yellow flowers to the sun with his golden rays. The root is mostly perennial; the stem herbaceous, upright, and often very tall; the leaves opposite or alternate, undivided, often rigid and scabrous; the flowers large and terminal, usually disposed in a corymb. It belongs to the *compositæ*. The species are numerous, and mostly inhabit North America. The gigantic sun-flower (*H. annuus*), so common in our gardens, is a native of Peru. The root is annual; the stem thick, cylindrical, rough, from six to fifteen feet in height; the leaves alternate, petiolate, large, and somewhat heart-shaped; the flowers, sometimes a foot in diameter, are so inclined as to take nearly a vertical position, and usually are turned towards the south; they have the disk very large, and the rays short in proportion. The seeds form excellent nourishment for poultry and for cage birds; and an edible oil has also been expressed from them.—*H. tuberosus* is a native of Brazil, and has been extensively cultivated in Europe for the sake of its tuberous roots, which are used as a substitute for the potato. It is often called *Jerusalem artichoke*, the first term being a corruption of the Italian word *girasole*; and the latter has been applied to it from the resemblance in the flavor of the roots to that of the common artichoke. These roots are eaten cooked in various manners, but are not so generally liked as potatoes; neither are they so nourishing or wholesome: they are, however, excellent for sheep and other domestic animals during the winter season. The plant flourishes in every soil, requiring little attention; but in a good soil the roots are larger and of a better quality. When once planted, they may be left for years upon the same ground, as there are always enough roots remaining for reproduction, after the removal of all that are wanted for the purposes of aliment. The season in which they are dug up for use is from about the middle of September to November. So extremely productive is this valuable plant, that between seventy and eighty tons of the roots are said to have been obtained in one season from a single acre of ground. This plant grows to the height of eight or nine feet: the flowers are much smaller than those of the preceding.

Sunna; with the ancient northern tribes, the goddess of the sun. Her brother was Mani, god of the moon.* In honor of her, a boar was fattened through the year; and at the beginning of February, it was sacrificed, with many ceremonies. Eight days before January, the boar was carried to the ruler of the country, and on its back the principal men took the oath of fidelity and allegiance. The image of Sunna was a half-naked woman, standing upon a column, with rays round her head. Before her breast she held a radiant wheel with out-stretched arms.

Sunna, in the Mohammedan religion. (See *Sunnites*.)

Sunnites; those Mohammedans who receive the *Sunna* (i.e. a collection of traditions relating to Mohammedanism) as of equal importance with the Koran. There are several diversities in the copies of the *Sunna*. Those of the Persians, Arabians and Africans are entirely opposed to each other; hence the various sects. The adherents of Ali, who reject the *Sunna*, and regard Ali as Mohammed's successor in the dignity of high-priest (for instance, the Persians), are called by the Sunnites (the Ottoman Turks) *Shiites* (i. e. heretics).

Suovetaurilia; a Roman sacrifice, usually offered after the census of the people had been taken. It consisted of a hog (*sus*), a sheep (*ovis*), and a steer (*taurus*); hence the name. All these animals were males.

Superior; the largest lake in North America, and the largest body of fresh water that has been discovered in any part of the globe. Its length is differently estimated by travellers and geographers: some make it 490 or 500 miles long, and 1700 in circumference; others, 350 miles long, and 1500 miles in circumference. Its widest part is said to be 190 miles. This is the most western of the great chain of lakes, which discharge their waters by the St. Lawrence. Its surface is 641 feet above the Atlantic. It is 900 feet deep. Its waters are very pure and transparent; and it abounds with trout, white fish and sturgeon. The names of these fish are likely to convey diminutive ideas both as to numbers and quantity; but we must think of trout quite equal in size to the cod of the Newfoundland banks, and of white fish and sturgeon comparatively large. The average weight of the trout exceeds twelve pounds, and many weigh forty, and some even fifty pounds. These fish exist in such numbers, that there can be no doubt that they will supply the whole country in the north-west section of the U. States, and Upper Canada, with dried fish, when that country shall be peopled by many millions. Lakes Huron and Michigan also abound with them. This lake, and the others, also, abound with pike, pickerel, carp, bass, herring, and numerous other kinds of fish. The great lakes, from the comparative shallowness of their beds, and the circumstance that their waters possess less specific gravity than those of the ocean,—and it may be from other causes,—when swept by the winds, raise waves more rough and dangerous than those of the sea, though not quite so mountainous. It has been often asserted that they have diurnal and septennial fluxes and refluxes. This, however, is not an established fact; and we are certain that, even if they exist, they are irregular and inconsiderable. The waters of lake Superior are partly derived from the marshes and shallow lakes, covered with wild rice, which supply the upper waters of the Mississippi. These are slimy and unpalatable until they find their level, and undergo the action of the lake, where they become transparent, and lose their swampy taste. The lower strata of the waters of the lake never gain the temperature of summer. A bottle sunk to the depth of a hundred feet, and there filled, in midsummer, feels, when brought to the surface, as if filled with ice-water. The shores of this lake, especially on the north and south, are rocky and nearly barren. In some places, the coast is very rough, and highly elevated. The lake is of difficult navigation; but there seem to be no insurmountable obstacles to its becoming a pathway for all vessels of strength and good size. It contains many islands. Isle Royal, the largest, is said to be one hundred miles long, and forty broad. It receives more than thirty rivers, and discharges its waters into lake Huron by the river or strait of St. Mary. The *pictured rocks*, so called from their appearance, are on the south side of the lake, towards the east end. They are an extraordinary natural curiosity. They form a perpendicular wall 300 feet high, extending about twelve miles. They present a great variety of forms, having numerous projections and indentations, and vast caverns, in which the entering waves make a jarring and tremendous sound. Among the objects here which attract particular attention, are the cascade La Portaille and the Doric arch. The cascade consists of a considerable stream, precipitated from the height of about seventy feet by a single leap into the lake. It leaps to such a distance, that a boat may pass dry between it and the rocks. The Doric rock, or arch, has the appearance of a work of art, consisting of an isolated mass of sandstone, with four pillars supporting an entablature or stratum of stone, covered with soil, and a handsome growth of pine and spruce trees, some of which are fifty or sixty feet high. The only outlet to this lake is St. Mary's strait. This extends to lake Huron: others connect the other lakes; and the combined waters of all find their way to the ocean by the St. Lawrence. It is not, however, to be imagined, that the St. Lawrence discharges an amount of water that is at all comparable with what the lakes receive. They spread over so great a surface, that the evaporation from them must be immense. They are scarcely affected by the spring floods of the hundreds of rivers which they receive; and their outlets have no such floods. Like the ocean itself, these mighty inland seas seem to receive without increase, and to impart without diminution.

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* In German, the sun (*Sonne*) is feminine, and the moon (*Mond*) masculine.

SUPERIOR PLANETS. (See *Planets*.)

SUPERNATURALISM, a word chiefly used in German theology, is contradistinguished to *rationalism*. It is difficult to give any satisfactory view of these conflicting religious opinions, within our limits; but the subject is too interesting to be wholly passed over. In its widest extent, supernaturalism is the doctrine, that religion and the knowledge of God require a revelation from God. So far there is no difference of sentiment. All admit that God cannot be conceived of, except on the supposition that he has manifested himself; but the next step gives rise to disagreement. What is this manifestation or revelation, from which we derive the knowledge of God? Some conceive such knowledge to be conveyed only by a direct external communication from God; to which it is objected that freedom of faith and knowledge would be thereby destroyed, and, at the same time, all examination of true religion, and distinction of it from superstition and fanaticism, would cease. To this supernaturalism, which considers religión as something supernatural, excluding the free activity of the intellectual nature of man, is opposed the other extreme, that religion is founded on human reason alone, and can dispense with a revelation from God. But, generally speaking, the words *supernaturalism* and *rationalism* are used particularly in reference to the Christian religion. Rationalism maintains that the Christian religion must be judged of, like other phenomena, by the only means which we have to judge with, viz. reason. It often goes farther, and asserts, that Jesus was only a man of an elevated character, who purified religion from corruption, and inculcated nobler views respecting God, and the destiny of man, than those which had prevailed among the Jews and heathens before him, and preached and practised a purer morality, which, through God's favor, became widely diffused. All notions which cannot be reconciled with these, they say, ought to be considered as additions to the simplicity of Christianity, and to be set aside, or rejected. Supernaturalism considers the Christian religion as an extraordinary phenomenon, out of the circle of natural events, and as communicating truths above the comprehension of human reason. Jesus is that person of the Godhead who brought this supernatural truth to men, and, by his blood, saved the human species from the lost state to which it had been reduced by the fall of Adam, rose again, and now rules the world with God the Father. Human reason must therefore receive, unconditionally, the mysterious truths, divinely communicated in the Holy Scripture; and this is the only way to learn the truth and obtain salvation. These views are variously modified; and, as is the case with all important questions, many believe that both run into extremes; that in the one, too much is claimed for human reason, whilst in the other, feeling has an undue ascendency; that supernaturalism has depth without clearness, and rationalism, such as we have represented it, clearness without depth. This intermediate party, who by some have been termed *rationalists*, whilst the extreme party are called *hyperrationalists*, say that supernaturalism removes religious truth beyond the sphere of the human understanding, and even beyond the possibility of recognition. If, say they, divine truth is something which comes entirely from without, and is unconnected with other truth, where is our capacity to recognise it? The revelation of the omnipresent Ruler of the world, which pervades all ages, is, they further say, annihilated, if Christianity has no connexion with that revelation, or manifestation, and if it is essentially different from what existed before, or without it. On the other hand, they allow that the hyperrationalists misunderstand the character of human reason, and oppose it to Christianity, so as to reduce this to an ordinary subject of human judgment. Christianity they consider as intermediate between these two views, as presenting in Christ the sublimest union of man with God, whilst it leaves to theological science the task of unfolding the full extent of revealed truth.

Superstition; the error of those who, in their opinions of the causes on which the fate of men depends, believe or disbelieve, without judgment and knowledge. The external causes by which the fate of men is decided, are God and nature; and accordingly there is a religious, and a philosophical superstition. Superstition shows itself either in deriving natural effects from supernatural causes, attributing, for instance, an uncommon disease, connected with striking symptoms, to the influence of some evil spirit, or in believing such events as accidentally follow each other to be united by invisible connexions; as, for example, in considering a comet a messenger of distress, because it has happened sometimes, that, after the appearance of a comet, a misfortune has taken place. It is impossible to point out all the kinds of superstition, as they have existed among different nations, and to estimate the melancholy effects which they have had on human virtue and happiness. Yet it is not always easy to fix the limits of superstition; and many an assertion or opinion, which has been rejected, at one time, as mere superstition, has been proved, in later times, to be founded in truth. Medical science, in particular, affords many such instances.

Supplement of an Arc, in geometry, is the number of degrees that it wants of being an entire semicircle; as *complement* signifies what an arc wants of being a quadrant. In literature, *supplement* is an appendage to a book, which supplies what was deficient in it.

Supporters, in heraldry; figures standing on the scroll, and placed by the side of the escutcheon, and seeming to support or hold up the same. They are sometimes human figures, and at other times animals, and creatures of the imagination.

Supremacy. According to the Roman Catholics, St. Peter was not only the head of the apostolical college, but the pastor of the universal church. The Roman pontiff is the successor of this prince of the apostles, and, like him, has authority and jurisdiction over the whole church, all believers, without exception, owing him respect and obedience. The council of Trent declared that the sovereign pontiff is the vicar of God upon earth, and has supreme power over all the church. The extent of the authority thus assumed by the pope, is different in different countries, and the whole doctrine of the papal supremacy is of course rejected by the Protestant, Greek and other churches. In 1534, Henry VIII assumed the title of the only supreme head, on earth, of the church of England. The *oath of supremacy* (that is, of renunciation of the papal supremacy), with the oath of abjuration (q. v.), was formerly required to be taken by all persons in office, and might be tendered, by two justices of the peace, to all persons suspected of disaffection in England. Some modifications of the law requiring this oath were made in 1793 (see *Catholic Emancipation*); but it was still, with the declaration against transubstantiation, the invocation of saints, and the sacrifice of the mass, requisite as a qualification for sitting and voting in parliament, and for holding certain offices, until the passage of the Catholic relief bill. This bill repeals all former acts on the subject, and requires of a Roman Catholic peer, or member of the house of commons, &c., besides the oath of allegiance and abjuration, the following oath of supremacy: I do declare that it is not an article of my faith, and that I do reject, renounce and abjure the opinion, that princes excommunicated or deprived by the pope, or any other authority of the see of Rome, may be deposed or murdered by their subjects, or by any person whatsoever; and I do declare that I do not believe that the pope of Rome, or any other foreign prince, prelate, person, state or potentate, hath, or ought to have, any temporal or civil jurisdiction, power, superiority or preëminence, directly or indirectly, within this realm.

Supreme Court of the U. States. (See *Courts of the U. States*, paragraph 3.)

Surat; a city of Hindoostan, in Guzerat, on the Taptee, twenty miles from its mouth; lon. 73° 3′ E.; lat. 21° 13′ N. The population was estimated, in 1796, at 800,000; the returns of 1816 gave a population of about 325,000. It is one of the most ancient and populous cities of India, and was formerly called the imperial port, and was the place whence Mohammedan pilgrims were conveyed to Mecca, often at the expense of government. The articles of its commerce were of the richest kind, viz. diamonds, pearls, gold, musk, ambergris, spices, indigo, saltpetre, silk, and fine cottons. But since the rise of Bombay, its commerce has much declined, and now consists chiefly of raw cotton, a few of its own manufactures, and articles imported from Guzerat. The greater number of vessels that now enter the port are Arabs. All large vessels are obliged to remain at the mouth of the river called Swallow roads, where they are somewhat exposed to storms; but the anchorage is good. The value of the exports, in 1811, amounted to 3,964,523 rupees. Surat is situated in a fertile plain, protected on one side by the river, and on the three others by a brick rampart and ditch. It also possesses a strong citadel, surrounded by an esplanade. It is inhabited by a great variety of people; but the Parsees, or fire worshippers, are most affluent. In 1807, there were reckoned 1200 Parsees of the sacerdotal class, and 12,000 of the laity. The hospital for the preservation of maimed or diseased animals was formerly occupied by rats, mice, bugs, &c. The squares of the city are large, the streets spacious, but not paved, and the dust troublesome. The larger houses are flat roofed; the houses of the common people high roofed. The civil administration of this city has been vested in the hands of the English East India company since 1800.

Surd, in arithmetic and algebra, denotes any number or quantity that is incommensurable to unity; otherwise called an *irrational* number or quantity. (See *Irrational Quantity.*)

Surgery (from the Greek χεὶρ, the hand, and ἔργον, work); that branch of the healing art which cures or prevents diseases by the application of the hand, either unaided or with the aid of instruments. War early made the healing of wounds more important than the curing of diseases, which were then less frequent, on account of the simple manner of living. Fifty years before the Trojan war, Melampus, Chiron, and his disciple Æsculapius, accompanied the Argonautic expedition in the quality of surgeons; and in the Trojan war, two sons of Æsculapius, Machaon and Podalirius, took care of the wounded Greeks. The Greek and Arabian physicians, at a later period, cultivated surgery and medicine together, as is proved by the works of Hippocrates, Galen, Celsus, Paulus of Ægina, Albucasis, &c. However, in the time of Hippocrates, some surgical operations were kept separate from medicine. In the oath of Hippocrates, lithotomy was forbidden to physicians. The Arabians also felt an aversion for operations, and it was considered beneath the dignity of physicians to operate themselves. The Romans left them generally to their slaves. In the middle ages, the practice of the healing art was almost exclusively confined to the monks and priests. But, in 1163, the council of Tours prohibited the clergy, who then shared with the Jews the practice of medicine in Christian Europe, from performing any bloody operation. Surgery was banished from the universities. under the pretext that the church detested all bloodshed. Medicine and surgery were now completely separated. This separation was the more easily effected, since the bath-keepers and barbers had undertaken the practice of surgery. At the time of the crusades (from 1100), many diseases were introduced into Europe from the East, particularly into Italy, France and Germany, which caused the frequent use of baths, and the establishment of bathing-houses. In France, the company of barbers was formed, in 1096, when the archbishop William, of Rouen, forbade the wearing of the beard. These bath-keepers and barbers remained for several centuries in possession of the practice of surgery. Meanwhile the mists of the middle ages disappeared. Enlightened by anatomy, surgery assumed a new form; and the works of Berengario de' Carpi, of Fallopius, of Eustachius, &c., were the true source of the knowledge with which Ambrose Paré enriched this science, which had been degraded by its union with the barber's trade. By the discoveries of Cæsar Magatus, Fabricius ab Aquapendente, Wiseman, William Harvey, and Fabricius Hildanus, surgery made new progress. In 1731, the surgical academy was established in France, which soon became celebrated throughout Europe. Maréchal la Peyronie, Lamartinière, &c., were distinguished surgeons. The collection of memoirs and prize writings of the surgical academy contains the history of this flourishing period. There are preserved the labors of J. L. Petit, Garengeot, Lafaye, Lecat, Sabatier, and of several other practitioners. The emulation of all Europe was excited by such an example. At this period flourished, in England, Cheselden, Douglas, the two Monros, Sharp, Alanson, Pott, Smellie, the two Hunters; in Italy, Molinelli, Bertrandi, Moscati; in Holland, Albinus, Deventer, Camper; in Germany and the north of Europe, Heister, Zach, Platner, Stein, Röderer, Bilguer, Acrell, Callisen, Theden, and Richter. Down to the end of the last century, the French surgical academy contained many distinguished members. Desault (q. v.) became the chief of the new school. Besides the surgical school of Paris, that of Strasburg, and particularly that of Montpellier (where Delpech distinguished himself), which has not always agreed with that of Paris, are celebrated. Now that surgery goes hand in hand with medicine, and is supported by exact anatomical knowledge, it advances with certainty towards perfection. All surgeons, however, are not capable of performing great operations. Some of the necessary qualities may be acquired by practice; but some of them must be received from nature. Sam. Cooper's Dictionary of Surgery, &c. (fourth edition), and Richerand's Origin of Modern Surgery (fifth edition, Paris), are much celebrated.

SURINAM; a territory and colony of South America, in Guiana, belonging to the Netherlands, lying west of French Guiana and east of English Guiana; bounded north by the Atlantic, east by the river Maroni, south by a country of the Indians, and west by the river Courantyn. It is about 150 miles from east to west, and upwards of sixty from north to south; square miles, about 11,000; population, 57,000. The principal rivers are the Surinam, from which the colony takes its name, the Courantyn, Copename, Seramica, and Maroni. The first only is navigable: the others, though long and broad, are so shallow, and so crowded with rocks and small islands, that they are of but little consequence to Europeans; nor are their banks inhabited, except by Indians. In all of them the water rises and falls for more than sixty miles from the mouth, occasioned by the stoppage of the freshes by the tide. In the Maroni is found a pebble called the *Maroni diamond*. The climate, which was formerly extremely fatal to Europeans, has, within the last twenty years, been much improved, by the increased population of the colony and the better clearing of the ground. The year is divided into two wet and two dry seasons. The highest heat during the hot season is stated at 91°; the common temperature from 75° to 84°. This equal degree of heat is owing to sea-breezes, which regularly set in at ten o'clock, and continue till five P. M., cooling the atmosphere with a constant stream of delightful air. The settlements are chiefly on the Surinam and its branches. The soil is very fertile, producing sugar, coffee, cotton, cocoa, maize, and indigo. The uncultivated parts are covered with immense forests, rocks, and mountains;

some of the latter enriched with a variety of mineral productions. The river Surinam, which gives name to the colony, rises from mountains in the interior, and, after a course of about 150 miles, flows into the Atlantic, lon. 55° 40′ W., lat. 6° 25′ N. It is about four miles wide at its mouth, and from sixteen to eighteen feet deep, at low water mark, the tide rising and falling above twelve feet. It is navigable for small craft 120 miles. Paramaribo, twelve miles from its mouth, is the capital of the colony. It has a safe and convenient harbor, with an active commerce, and contains a population of 8000 whites, and several thousand free blacks, slaves, &c. The English have several times been in possession of Surinam, but finally restored it, in 1815, to the Dutch government.

Surrey. (See *Howard*, *Henry*.)

Surrogate; one who is substituted or appointed in the room of another; as the bishop or chancellor's surrogate (from the Latin *surrogare*).

Sursolid, in arithmetic and algebra; the fifth power, or fourth multiplication of any number or quantity, considered as a root. (See *Root*.)

Surturbrand, fossil wood, impregnated more or less with bitumen, is found in great abundance in Iceland. A bed of it extends nearly through the whole of the north-western part of the island. It is, in fact, a subterranean forest, impregnated with bituminous sap, and compressed by the weight of the superincumbent rocks. Branches and leaves are pressed together in a compact mass; but the fibres of each may be distinctly traced. The surturbrand is used by the Icelanders chiefly in their smithies, and in small quantities. It is sometimes so little mineralized as to be employed for timber.—*Surtur* is the name of the northern god of fire. (See *Northern Mythology*.)

Surveying, in a general sense, denotes the art of measuring the angular and linear distances of objects, so as to be able to delineate their several positions on paper, and to ascertain the superficial area, or space between them. It is a branch of applied mathematics, and supposes a good knowledge of arithmetic and geometry. It is of two kinds, land surveying and marine surveying, the former having generally in view the measure or contents of certain tracts of land, and the latter the position of beacons, towers, shoals, coasts, &c. Those extensive operations which have for their object the determination of the latitude and longitude of places, and the length of terrestrial arcs in different latitudes, also fall under the general term *surveying*, though they are frequently called *trigonometrical surveys*, or *geodetic operations*, and the science itself *geodesy*. (See *Trigonometry*, *Degrees*, *Heights*, and *Triangle*.) Land surveying consists of three distinct operations: 1. the measuring of the several lines and angles; 2. protracting or laying down the same on paper, so as to form a correct map of an estate or country; 3. the computation of the superficial contents, as found by the preceding operation. Various instruments are used for the purpose of taking the dimensions, the most indispensable of which is the chain commonly called *Gunter's* chain, which is 22 yards long, and is divided into 100 links, each 7.92 inches: 10 of these square chains, or 100,000 square links, is one acre. This is used for taking the linear dimensions when the area of the land is required; but when only the position of objects is to be determined, a chain of 50 or 100 feet is more commonly used. A great deal of labor is frequently saved by having proper instruments for measuring angles. The most usual and the best adapted for this purpose are the circumferentor, theodolite and semicircle. The surveyor's cross, or cross-staff, is likewise very convenient for raising perpendiculars. For surveying in detail, the plain table is the best instrument. Of the German works on this subject, Meyer's *Unterricht zur praktischen Geometrie* (1815), and Lehmann's *Anweisung zur richtigen Erkennung und genauen Abbildung der Erdoberfläche* (1812), deserve to be recommended. (See *Topography*.)

Sus. per Coll. On the trial of criminals in England, the usage at the assizes is for the judge to sign the calendar, or list of all the prisoners' names, with their separate judgments in the margin. For a capital felony, the sentence "Hanged by the neck" is written opposite the prisoner's name. Formerly, in the days of Latin and abbreviation, the phrase used was *sus. per coll.*, for *suspendatur per collum*.

Susquehanna, the largest river of Pennsylvania, is formed by two branches which unite at Northumberland. The east branch rises in Otsego lake, in New York: the western branch rises in Huntingdon county, Pennsylvania. After their junction, the river flows south-east into the head of Chesapeake bay, and is one and one fourth mile wide at its mouth. It is navigable only five miles.

Sussex, Augustus Frederic, duke of,

sixth son of George III, and second surviving brother of the present king, was born Jan. 27, 1773, and received his education, with his brothers, the dukes of Cumberland and Cambridge (see the articles), at Göttingen. He then travelled in Italy, and spent four years at Rome, where, in 1793, he married lady Augusta Murray, daughter of the Catholic earl of Dunmore, according to the forms of the Roman Catholic church. On their return to England, they were again married by bans in London; and the duke offered to resign his claims as a member of the royal family, on condition that his marriage should not be disturbed. It was, however, soon after declared invalid by the ecclesiastical court, as contrary to the provisions of the royal marriage act, 12 Geo. III, c. 11, which declares that no descendant of George II shall be capable of contracting matrimony without the consent of the king. On the publication of this sentence, lady Augusta, who had become the mother of two children, separated from the duke, and passed the rest of her life in retirement. In 1801, the prince was created earl of Inverness and duke of Sussex, and received a parliamentary grant of £12,000 per annum, which was subsequently increased by the addition of £9000. It is the boast of the duke that he has never applied for any grant from parliament, and that he has paid his debts fully from the savings of his pension. The duke is an easy speaker, and has often spoken in the house of lords, particularly in favor of measures for the relief of Catholics, and usually addresses the many charitable and literary societies of which he is a member. He has been for a long time president of the society for the encouragement of the useful arts, and has recently been elected president of the royal society. He has been the friend and patron of learned men, and is himself a scholar. He has collected a valuable library, particularly rich in Bibles and dictionaries. A catalogue has been published by Pettigrew (*Bibliotheca Sussexiana*, 1828). In his political principles, the duke has been attached to the whigs, and was consequently in the opposition during the regency and reign of his brother George IV. His liberal opinions in politics, and the part which he took in favor of the queen (see *Caroline Amelia*), estranged him from the court; but a reconciliation took place during the king's last illness. The children of the duke by lady Augusta Murray bear the name of D'Este.

Sussmeyer, Francis Xavier; a composer at Vienna, a pupil of Salieri, and, from 1795, attached to the imperial opera at Vienna. He died in 1803, thirty-seven years old. He composed several operas, and supplied those parts of Mozart's requiem which that great master left unfinished.

Suttee, or, more properly, **Sati**; a word in the Sanscrit, or sacred language of the Hindoos, meaning *pure*, and hence extensively applied to their female deities, and to acts of purification, especially to that preëminent species, the self-immolation of the widow on the funeral pile of her deceased husband. The name of this horrid sacrifice is commonly written *suttee* by the English; but *sati* is the correct mode of spelling it, according to the orthographical system of sir W. Jones. The origin of satiism, or sutteeism, is buried in mythology. The goddess Sati, to avenge an insult offered to her husband Iswara by her father's neglect to invite him to an entertainment, consumed herself before the assembled gods.* To lord Bentinck, governor-general of India, belongs the honor of having abolished this shocking perversion of devotion in the British dominions. This abolition took place in December, 1829. Until then, the British government had permitted it, provided the act was perfectly voluntary (which the religion of Brahma also prescribes), and if notice of such resolution had been previously given to a magistrate, who was required to see that the suttee was public, and that all the requisitions of the law were fulfilled. We learn from bishop Heber's Narrative that the opinions of well-informed men, to whom the cause of humanity was equally dear, were divided respecting the abolition of these self-sacrifices, some believing that suttees would then take place in secret, and be more common than before, and that opportunities, moreover, would be afforded for many murders. The people are said to have heartily rejoiced at the abolition; but, what may well surprise us, the East India Magazine states that an English lawyer went from India to England to prosecute an appeal before the privy council, made by some Brahmins in Bengal, against lord Bentinck's prohibition of suttees. The same journal states that this "custom had its origin in the excessive jealousy of the early Hindoo princes, who, with a view to prevent their numerous widows forming subsequent attachments, availed themselves of their irresponsible power; and, with the aid of the priests, it was promulgated, as if by sacred authority, that the wives of the Hindoos of every caste, who desire future beatitude, should immolate themselves on the demise of their husbands. Since 1756, when the British power in India became firmly established, upwards of 70,000 widows have been cruelly sacrificed! A Brahmin possesses the privilege of marrying as many wives as he pleases. Ununtu, a Brahmin who died at Bagnapore, had more than one hundred wives: twenty-two were burned at his death. The fire was kept burning three days. He had married four sisters, two of whom were burned with his corpse. A short time before lord Bentinck's order, a rajah in the hill country, who died, had twenty-eight wives burned with his body." So far the East India Magazine. Perhaps, however, this self-immolation is in part owing to the surprisingly little value which Hindoos put on human life (hence so many suicides, infanticides, immolations and self-immolations), and to the relation of the Hindoo wife to her husband. None of the sacred books of the Hindoos command the suttee, though they speak of it as highly meritorious: it is believed to render the husband and his ancestors happy, and to purify him from all offences, even if he had killed a Brahmin. (See the *Veda*, &c., quoted before the privy council, June 23, 1832, to support the above-mentioned petition.) The rule is, that the act of the widow must be voluntary; but we can easily imagine that the fanaticism or cupidity of relations often compels the Hindoo widow to immolate herself, just as they forced women, in the middle ages, to take the veil, which also is required, by the rules of the church, to be voluntary. The ceremonies of a suttee are various, and last from a quarter of an hour to two hours. Sometimes the widow is placed in a cavity prepared under the corpse of the husband; sometimes she is laid by the body, embracing it. If the husband was not a Brahmin, it is not required that the corpse should be burned with the widow: any thing which belonged to the deceased—his garments, slippers, walking-staff—may be substituted for the corpse. There were, according to official report, above forty suttees in the province of Ghazepoor in 1824; and several had taken place not reported to the magistrate.

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* See Tod's *Annals and Antiquities of Rajast'han*; also the review of it in the American Quarterly, number xx, December, 1831.

Suwaroff-Rimnitzkoy, Peter Alexis Wasiliowitsch, count of, prince Italinski, field-marshal and generalissimo of the Russian armies, one of the most distinguished generals of the eighteenth century, was born at Suskoy, a village of the Ukraine, in 1730. His father, an officer, placed him in the military academy at Petersburg; and, in his seventeenth year, Suwaroff entered the service as a common soldier, and gave proofs of his courage in the war against Sweden. In 1754, he became lieutenant, and, after distinguishing himself in the seven years' war (q. v.), received the command of a regiment, in 1763. In 1768, he obtained the rank of brigadier-general, and served several campaigns in Poland, receiving, in reward for his courage and conduct, the crosses of three Russian orders of knighthood. In 1773, he was appointed to the command of a division of the troops under count Romanzoff, and completely defeated a portion of the Turkish army at Turtukey, killing several of the enemy with his own hand. Crossing the Danube, he afterwards, in conjunction with the force under Kamenskoy, routed the army of the *reis effendi* with great slaughter, and the capture of all his artillery. In 1783, he reduced the Budziac Tartars under the Russian yoke. In 1787, being chief in command, he was intrusted with the defence of Kinburn, then attacked by the Turkish forces both by sea and land; and, after an obstinate siege, succeeded in repulsing his assailants with considerable loss. At Oczakow and Fockzami (at the former of which places he received a severe wound) his daring valor was equally displayed; and, in the September of 1789, the Austrian troops, under the prince of Saxe-Coburg, being surrounded, on the banks of the Rimnik, by 100,000 Turks, owed their preservation to his timely arrival with 10,000 Russians, who not only rescued them from a destruction that appeared inevitable, but occasioned the utter overthrow of the enemy. To this victory he was indebted for the first of his above-named titles, and the dignity of a count of both empires. The next, and perhaps the most sanguinary of his actions, was the storming of Ismail (q. v.), in 1790. This strongly fortified town had resisted all attempts to reduce it for a period of seven months, when Suwaroff received peremptory orders from prince Potemkin (q. v.) to take it without delay, and pledged himself to execute the task assigned him in three days. Of the sacking of the place on the third, and the indiscriminate massacre of 40,000 of its inhabitants, of every age and sex, the accounts of the period give the most revolting reports. The announcement of his bloody triumph was made by the general, who affected a Spartan brevity in his despatches, in the words "Glory to God! Ismail is ours." Peace being proclaimed with Turkey, the empress (see *Catharine II*) had leisure to mature her designs against the devoted kingdom of Poland; and Suwaroff was selected as a fit instrument to carry them into execution. He marched, accordingly, at the head of his troops, to Warsaw, destroying about 20,000 Poles in his way, and ended a campaign of which the unprincipled partition of the country was the result. (See *Praga*, and *Poland*.) On this occasion, he received a field-marshal's baton, and an estate in the dominions which he had contributed to annex to the Russian crown. The last and most celebrated of his actions was his campaign in Italy in 1799, when his courage and genius for a while repaired the disasters of the allied forces. Paul gave him the command of the Russian forces destined to act with the Austrians, and the emperor of Germany created him field-marshal, and commander-in-chief of the Austrian troops in Italy. He gained several brilliant victories at Piacenza, Novi, &c., and drove the French from all the towns and fortresses of Upper Italy, and was rewarded for his services with the title of *prince Italinski*. But, in consequence of a change in the plan of operations, he passed the Alps; and the defeat of Korsakoff at Zürich (see *Masséna*), together with the failure of the expected assistance from the Austrians, obliged Suwaroff to retreat from Switzerland. Paul, offended with the Austrian court, now recalled the prince, in spite of his remonstrances; and preparations were made for his triumphal entry into Petersburg. Meanwhile, Suwaroff, having evaded an imperial order, directing the generalissimo to name each general in turn general of the day, by appointing prince Bagration standing general of the day, was declared, by command of the emperor, to have deserved censure, and the preparations for his triumph were suspended. Chagrin at this disgrace hastened his death, which took place May 18, 1800, sixteen days after his arrival at Petersburg.—Suwaroff was a remarkable man. Though feeble and sickly in his youth, he had acquired a sound constitution by his simple and abstemious mode of life: he slept upon straw, and his whole wardrobe consisted of his regimental uniform and a sheepskin. He observed punctiliously all the ceremonies of his religion, and never gave the signal for battle without crossing himself, and kissing the image of St. Nicholas. He was inflexible in his purposes, faithful to his promises, and incorruptible: in courage, promptness of decision and action, he has had few equals. His contempt of money, his coarse manners, and his intrepidity, rendered him the favorite of his soldiers; but the superior officers were often offended by the severity of his discipline. Although acquainted with several modern languages, he never entered into any political or diplomatic correspondence; and he was accustomed to say that a pen was unbecoming the hand of a soldier. His orders and reports were often written in doggerel verse.

SWABIA. (See *Suabia*.)

SWALLOW (*hirundo*). The air seems to be truly the home of the swallows: they eat, drink, sometimes even feed their young, on the wing, and surpass all other birds in the untiring rapidity of their flight and evolutions. The beak is short, broad at base, very much flattened, and very deeply cleft, forming a large mouth, well adapted to the purpose of seizing winged insects, which constitute their accustomed food. The feet are very short, and the wings remarkably long. In winter they migrate to tropical climates, a few days being sufficient to pass from the arctic to the torrid zone. In the spring they return; and it has been found by experiment that individuals always come back to their former haunts. They sweep over our fields, our rivers, and through our very streets, easily eluding all enemies by their powers of wing. We have six species in the U. States.—The barn swallow, (*H. rufa*) is most abundant east of the Alleghany mountains. Here it is our most common species, always seeking the society of man, and very frequently attaching its nest to the rafters in barns, &c. The upper parts are steel blue, the lower light chestnut, and the wings and tail brownish-black; the tail is greatly forked, and each feather, except the two middle ones, is marked on the inner vane with a white spot.—The white-bellied swallow (*H. viridis*) is less abundant than the preceding, but not unfrequently takes possession of the boxes intended for the purple martin. The upper parts are light, glossy, greenish-blue; the wings brown-black, with slight green reflections, and the whole lower parts pure white: the tail is forked, but slightly, in comparison with the barn swallow, from which it may also be distinguished by its sailing more in its flight.—The purple martin (*H. purpurea*) inhabits all parts of the U. States, and Canada to Hudson's bay. It is a general favorite, and every where takes up its abode among the habitations of men. The Indians and Negroes hang up gourds, properly hollowed, for its convenience; and, in the more settled parts of the Union, considerable expense is sometimes incurred in preparing for it a suitable residence. In the country, it renders essential services, by attacking and driving away crows, hawks, eagles, and other large birds. Its note is loud and musical. It is much the largest of our swallows. The color of the male is a rich and deep purplish blue, with the wings and tail brownish-black; the female is more plainly attired, and has the under parts whitish, with dusky and yellowish stains.—The bank swallow (*H. riparia*) is common in the U. States, as well as in the eastern continent. Unlike the others, it has no partiality for the society of man, but dwells in communities along steep gravelly banks, in which it scratches out horizontal holes for breeding places. It is particularly fond of the shores of rivers, and is found in immense multitudes in several places along the Ohio. It is the smallest of our swallows. The color is brown above, and beneath white, with a brown band across the breast.—The republican or cliff swallow (*H. fulva*) is easily distinguished by its even tail. The upper parts of the body are black, glossed with violaceous; the under parts whitish, tinged with ferruginous brown; the throat and cheeks dark ferruginous; and the front pale rufous. The note is very singular, and may be imitated by rubbing moistened cork round the neck of a bottle. It lives in communities, building in unsettled places, under projecting ledges of rocks. The nests are formed of mud, are very friable, and somewhat resemble, in form, a chemist's retort. It is common about the base of the Rocky mountains, and within a few years has become familiar in many parts of the Western States, as well as in the state of New York, and even in Maine.—The chimney swallow (*H. pelasgia*) differs widely from the others, in its form and manners. The color is entirely deep sooty brown; the tail is short and rounded, having the shafts extending beyond the vanes, sharp pointed, strong and elastic, by means of which structure the bird is enabled to rest against perpendicular walls. It is easily distinguished in the air by its short body and long wings, their quick and slight vibration, and its wide, unexpected, diving rapidity of flight. In the settled parts of the country, it builds only in vacant chimneys, and in passing up and down produces a noise somewhat resembling distant thunder. The nest is small and shallow, attached by one side, and composed of very small twigs glued together with a strong adhesive gum. Sometimes chimney swallows congregate in immense numbers, to roost in certain hollow trees; and such are generally noted in the country as "swallow trees." While roosting, the thorny extremities of the tail are thrown in for support. The birds' nests of China, so celebrated as an article of food, are the fabric of a small species of swallow, found in the Indian archipelago.

Swammerdam, John, a very distinguished naturalist, was born at Amsterdam, in 1637. His father, who was an apothecary, designed him for the church; but, as he preferred physic, he was allowed to pursue his studies in that profession. He was sent to Leyden, where he quickly distinguished himself by his anatomical skill, and the art of making preparations. After visiting Paris for improvement, he returned to Leyden, and took the degree of M. D., in 1667, and about the same time began to practise his invention of injecting the vessels with a ceraceous matter, which kept them distended when cold—a method from which anatomy has derived very important advantages. Entomology, however, became his great pursuit; and, in 1669, he published, in the Dutch language, a General History of Insects. In 1672 appeared his *Miraculum Naturæ, seu Uteri muliebris Fabrica*, to which was added an account of his new method of waxen injection. Rendered hypochondriacal by intensity of study and other causes, he became totally unfit for society, in which state he received impressions from the mysticism of Antoinette Bourignon, whom he followed to Holstein. He afterwards returned to Amsterdam, where he died, in 1680. Previously to his death, in a paroxysm of enthusiasm, he burnt all his remaining papers, but, under the pressure of indigence, had already sold the greater part of his writings and drawings to Thevenot. These, half a century afterwards, came into possession of Boerhaave, who caused them to be published in Latin and Dutch, under the title of *Biblia Naturæ, sive Historia Insectorum in Classes certas reducta*, &c. (2 vols., folio, Leyden, 1737). This publication, which has been translated into

English by sir John Hill, abounds with the most curious discoveries. Besides the works before mentioned, he is author of *Tractatus Physico-Anatomico-Medicus de Respiratione* (Leyden, 1679, 8vo., and 1738, 4to.).

Swan (*cygnus*). The swans are so closely allied to the duck and goose, in their anatomical structure, that it is difficult to point out distinctive characters; although most of the species are readily recognised by their external form. The color of the plumage is, in general, pure white; a black species, however, has been lately discovered in New Holland. In northern climates, the swans are the ornament of the rivers and lakes, over which they seem to preside, from the majesty, ease and grace of their movements. They swim rapidly, and their flight is powerful and long continued; they live in society, and feed chiefly on the seeds, roots, and other parts of aquatic plants, but eat frogs, insects, and worms. They make their nests near the margin of the water, upon the ground, and attain a great age. The flesh is coarse, dark-colored, and in general not much esteemed. The tame swan is distinguished by its red bill, having a protuberance on the front. In its wild state, it inhabits the great interior seas of Eastern Europe, but is now domesticated in all parts of that continent. It often measures eight feet, when the wings are extended, and weighs twenty or twenty-five pounds. Its strength is such, that it has no formidable enemy, except the eagle, and in its battles with this antagonist often comes off victorious. It is to be regretted that we have not this noble bird more common in the U. States. The American wild swan breeds and passes the summer in the Arctic regions, but on the approach of winter, migrates to temperate climates. In the Atlantic states, it is hardly known east of the Chesapeake, which seems to be a favorite resort during the winter season.

Swan River; a British colony, on the western coast of New Holland, established in 1829. It is situated on Swan river, so called from the great number of black swans seen upon it, which empties into the ocean in lat. 32° 16′ S., lon. 115° 40′ E. Several settlements have been formed, and the soil is represented as fertile. Swan river was explored for nearly sixty miles from its mouth, by M. Bailly, mineralogist to the expedition of Baudin, who found it to flow over calcareous rocks, through a country covered with thick forests of gum trees. At the point where his examination ceased, the river was a third of a mile in width, with a slow current. A group of islands opposite the mouth of the river offers some roadsteads with safe anchorage for large vessels.

Sweaborg. (See *Sueaborg*.)

Sweat. (See *Perspiration.*)

Sweating Sickness, in medicine; a febrile epidemic disease, of extraordinary malignity, which prevailed in England, at different periods, towards the end of the fifteenth century and the beginning of the sixteenth, and spread very extensively in the neighboring countries, and on the continent. It appears to have spared no age nor condition, but to have attacked more particularly persons in high health, of middle age, and of the better class. Its attack was very sudden, producing a sensation of intense heat in some particular part, which afterwards overspread the whole body, and was followed by profuse sweating, attended with insatiable thirst, restlessness, head-ache, delirium, nausea, and an irresistible propensity to sleep, together with great prostration of strength. The patient was frequently carried off in one, two or three hours from the eruption of the sweat. It seems to have first appeared in the army of the earl of Richmond, upon his landing at Milford haven, in 1485, and soon spread to London. This body of troops had been much crowded in transport vessels, and was described by Philip de Comines as the most wretched that he had ever beheld, collected probably from jails and hospitals, and buried in filth. It broke out in England four times after this, in 1506, 1517, 1528, and 1551. The process eventually adopted for its cure, was to promote perspiration, and carefully avoid exposure to cold. The violence of the attack generally subsided in fifteen hours; yet the patient was not out of danger under twenty-four hours.

Sweden and Norway, or, as the united kingdoms are sometimes styled, even in official papers, **Scandinavia**, form the Scandinavian peninsula, which is connected with the continent of Europe by Lapland, and comprises 295,468, or, according to some, 291,224 square miles. It extends beyond the Arctic circle, stretching from 55° 22′ to 70° 11′ 30″ N. lat., and is bounded by the North sea and the Cattegat on the west and south-west; by the Baltic and the gulf of Bothnia on the east and south-east; its northern boundary is the Frozen ocean; on the north-east, Norwegian and Swedish Lapland border on Russian Lapland. The Paes, and (since 1809) the Torneo and Muonio, here form the separating line between Russia and Sweden. A chain of mountains forms a natural division between Norway and Sweden: the highest summits are the Syltop, 6079 feet high, and the Schneehättan, 8337 feet high, in Sweden; and the Folgesonde, 5432 feet high, in Norway. The northern part forms the Kjöl or Kiel mountains, and the southern, the Seve mountains. The former terminates in the North cape, the extreme northern point of Europe; the latter is nearer the western than the eastern shore, whence the main streams are on the eastern declivity, and flow partly into the gulf of Bothnia, and partly into the Cattegat. It divides into three branches; the Long Fjälls (Langfield and Dofrefield), extending to cape Lindesness (Lindenäs), on the North sea; a second branch separating the Norwegian basin of the Glommen from the Swedish basin of the Götha-Elf, and sinking down to the Cattegat; and a third dividing the sources of the Clara, which, after flowing through lake Wener (1100 square miles in extent), in Sweden, takes the name of Götha-Elf, from those of the Dal-Elf, and stretching between lakes Wener and Wetter, to the sound. The summits of the Scandinavian mountains, from 67° to 70° N. lat., are masses of barren rocks (Fjälls), covered, at the height of from 3900 to 2700 feet, with perpetual snow, and abounding with steep precipices, frightful clefts, lakes, and rapid torrents. The declivity towards the North sea is extremely precipitous, and full of abrupt crags and awful chasms. Nearer the eastern coast lies lake Mälar, fifty-five miles long, and from twenty-three to twenty-seven miles broad, containing 1300 islands, whose waters are emptied into the Baltic: lake Hielmar is connected with it. Lake Wetter receives forty rivers, and empties itself through the Motala into the Baltic. To Sweden belong Œland and Gothland, two fertile islands in the Baltic. The Aland group, at the mouth of the gulf of Bothnia, was ceded to Russia in 1809. The coast, broken by numerous indentures (Fiords), forms numerous holms or rocky islets (Stockholm, for instance), and safe harbors, especially on the shores of Norway; on which the Saltström, a dangerous strait, and the Maelström, a whirlpool, are particularly remarkable. The climate of Sweden and Norway, owing to the nature and elevation of the country, is, with the exception of the southern and western shores, dry and cold. Among the productions are orchard fruit, corn (in inadequate quantity, so that, in many places, the people mix powdered fir-bark or moss with their corn meal; in the south of Sweden, however, the cultivation of corn is increasing), potatoes, flax, hemp, hops, and tobacco, which, however, thrive only in the southern regions. In the north, the country is an almost impenetrable forest of pines and firs, and dwarf-birches, and abounds in deer, hares, elk, bears, and wolves. Berries and reindeer moss only grow here. Gluttons, lynxes, foxes, marmots, tame and wild birds, are also found. The poverty of the pasturage renders the horned cattle, goats, swine and sheep small; though the breed of the latter has been improved, since 1715, by the introduction of English and Spanish rams. The reindeer is a native of the north. (See *Deer*, and *Lapland*.) The climate of Sweden is, on the whole, warmer than that of Norway. On the coast, particularly on the Cattegat, the herring fishery was, a short time ago, of considerable importance. Seals, dolphins, and other fishes, are taken in plenty. The mineral kingdom is rich. Gold occurs only in small quantities. Silver is more abundant. The silver mines of Sala have yielded, during the three last centuries, 1,640,000 marks of pure silver. The copper mines at Fahlun (a mining town, with 4200 inhabitants) produce, at present, 1,200,000 to 1,800,000 pounds, and all the Swedish copper mines, a total of 1500 tons annually. Excellent iron is obtained in large quantities: 120,000,000 pounds are smelted every year, constituting seven eighths of all the mining products. The richest iron mines are those of Danemora, in Upland. Lead, cobalt, vitriol, sulphur, alum, some salt, marble, porphyry, granite, grind-stones, mill-stones, and sandstone, asbestos, slate, talc, lime, &c. occur. There are many mineral springs in Sweden; in Norway, only one

The Swedes and Norwegians are of a middle stature, and compactly built The purity and coldness of the air, and the necessity of extorting every thing from the earth, gives them a hardness akin to their native iron, and a bold independent spirit. In the sciences, the Swede shows a sound and penetrating mind Poetry and the fine arts have also put forth some fair blossoms in this rude climate. The language is of Teutonic origin. The Swedish and Norwegian dialects differ but little. The language of Lapland is a Finnish dialect. The two kingdoms, Norway and Sweden, had, in 1825, according to official documents, a population of 3,819,714—about thirteen to a square mile. But in the southern provinces of Sweden, there are 142 inhabitants to a square mile. The population, in 1828, was 3,878,700. Sweden alone contains 168,363 square miles, and 2,800,000 inhabitants. In all the cities, there are about 322,000 inhabitants. Stockholm, the capital of the kingdom, has a population of 79,526; Gottenburg (Götaborg), the principal commercial city in Sweden, 24,000; Christiania, the capital of Norway, 20,600; and Bergen, the chief commercial city of Norway, 20,800. But few towns, however, number more than 4000 inhabitants, and many have scarcely 500. Out of Europe, Sweden possesses, since 1784, St. Bartholomew, one of the West India islands, containing fifty-three square miles and 18,000 inhabitants.—*A. Sweden* (Svea) comprehends four regions: 1. Sweden Proper, or Svealand, comprising eight provinces, amoug which are Upland, Südermannland, or Sudermania, Dalarne, or Dalecarlia (a poor, hilly country, in which there were 40,000 men, in 1819, destitute of the means of support), and Wermeland, now forming eight governments (*läne*); 2. Gothland, or Gothia, comprising thirteen governments (Schonen, or Scania, one of its provinces, contains Helsingborg, on the sound, the place of embarkation for Denmark, and Ystadt, the place of embarkation for Stralsund); 3. Norrland, containing five provinces (Herjedalen, Jämtland, Westerbottn, &c.); 4. Swedish Lapland, containing from 34,000 to 38,000 square miles. The whole number of Swedish Laplanders was estimated, in 1818, at only 3000 persons, of whom 669 were owners of reindeer. To these must be added about 2000 colonists. Several of the colonies in Lapland were founded by baron Hermelin, at his own expense. This region yields but a trifling revenue to the crown.—*B. Norway.* The southern part (Södenfield) comprehends Christiania and Christiansand; the northern (Nordenfield), the dioceses of Bergen, Drontheim and Nordland: to the latter belongs Finnmark, or Norwegian Lapland. (See *Norway.*)

The original inhabitants of Sweden were of Finnish descent—Finns and Laplanders, who were driven to the extreme north by Germanic tribes. Among the latter, the Goths and Swedes soon gained the ascendency, subjecting the other tribes. Their chief magistrates were judges of the fabulous family of the Ynglings, which claimed a descent from a son of Odin. In the fifth century, they assumed the title of kings of Upsala, and reigned in Sweden till 1068. A regular government was first established by Olof, or Olaf I, in 994, who was converted to Christianity. The Goths and Swedes still remained distinct, and their disputes distracted the kingdom for centuries. In 1250, when the powerful family of the Folkungs ascended the throne, the two hostile tribes became united into one nation; and, at the same time, the succession was settled. Sweden then extended only to Helsingland. In 1248, Eric XI conquered the interior of Finnland; and, in 1293, Torkel Knutsen, the guardian of Birger, conquered Carelia, the extreme province of that country; so that Sweden now became the immediate neighbor of Russia. In 1332, Magnus Smek obtained possession, through Mats Kettilmundsen, of the provinces of Schonen, Bleckingen and Halland; but they were lost again in 1360. Tired of his oppression, the Swedes rebelled in 1363, and gave the crown to his sister's son, Albert of Mecklenburg. The Swedes soon became dissatisfied with their new king, who fell, in 1388, in the battle at Falköping, fighting against the Danes, whom his subjects had called in to their assistance. In 1389, Margaret, queen of Denmark and Norway, added Sweden to her other possessions; and the diet of Calmar (q. v.) ratified this union, 1397; each state retaining its own constitution. Troubles, rebellions, and, finally, complete anarchy, followed this measure; and, in 1448, the Swedes and Norwegians elected a separate king, Karl Knutsen (i. e. Charles, the son of Canute), and formally renounced the union. After the death of Charles, several of the family of Sture reigned in succession, with the title of presidents, though with regal authority, until, in 1520, Christian II of Denmark was acknowledged king of Sweden. But his tyranny disgusted the people. Even during the ceremony of the coronation, notwithstanding his promises of amnesty, he ordered ninety-four Swedish noblemen to be beheaded in the market-place of Stockholm, and perpetrated similar acts of cruelty in the provinces. In 1521, Gustavus Wasa, or Vasa, who had escaped from the Danish prisons, put himself at the head of the malcontents, and, in 1523, after the expulsion of Christian, was elected to the crown. He introduced the reformation among his subjects, added the estates of the clergy and the monasteries to his own domains, promoted the trade and commerce of Sweden by treaties with England and Holland, and, in 1544, secured to his family the succession to the throne. His son and successor, Eric XIV (reigned 1560—68), added Esthonia to Sweden, and, at his coronation, in 1561, introduced the titles of count and baron, before unknown in Sweden, which he bestowed upon several families. His suspicious disposition and tyrannical acts made him an object of popular hatred. He was deposed, and, after nine years' imprisonment, poisoned in a dungeon. He was succeeded (1568 to 1592) by his brother, John II, who, by the peace of Stettin, 1570, ceded to Denmark Schonen, Halland, Blekingen, Herjedalen and Gothland; and, in 1580, embraced the Catholic religion, in which he caused his son, Sigismund, to be educated. Sigismund, who received at the same time the Polish crown, was dethroned, in 1602, in Sweden, by his ambitious uncle, Charles, a zealous Lutheran, who was formally crowned, in 1604, as Charles IX. The wars, in which he became involved with Russia, Poland and Denmark, were happily concluded after his death, in 1611, by the great Gustavus Adolphus II (q. v.), who fell at Lützen, in 1632. (See *Thirty Years' War.*) In the reign of his daughter, Christina (q. v.), the war in Germany was honorably carried on and completed. During its progress, Sweden was menaced by Denmark; but the victories of Torstenson, and the mediation of France, led to the peace of Brömsebro (1645), by which Denmark gave up to Sweden Jemtland and Herjedalen, with the islands Gothland and Œsel, agreed to surrender Halland for twenty-five years, and exempted Swedish vessels from the sound dues. By the peace of Westphalia, Sweden obtained the German duchies of Bremen, Verden, Hither Pomerania, a part of Further Pomerania, and Wismar, with a seat in the German diet. In 1654, Christina resigned her crown to Charles X, Gustavus of Deux-Ponts, the nephew of Gustavus Adolphus. This martial prince administered the government till 1660. He had to contend with the Poles, Russians and Danes, and astonished the world by his daring enterprises; but he was unable to procure permanent tranquillity for his nation. The guardians of his son, Charles XI, concluded the peace of Oliva (q. v.), with the Poles, in 1660, by which all Livonia to the Dwina was transferred to Sweden; the peace of Copenhagen, with Denmark, by which they restored Drontheim and Bornholm (gained by Charles Gustavus in the peace of Roschild with Denmark (1658), together with Blekingen, Schonen and Halland), and came to a reconciliation with Russia, on the basis of the peace of Stolbow. Sweden became involved in an unsuccessful war against Brandenburg, Holland and Denmark; but, by the peace of St. Germain and Lund, in 1679, she lost only the part of Pomerania beyond the Oder. Charles XI entered upon the government in 1682, and admitted females to the succession. He improved the internal condition of his kingdom, revoked the grants of the crown lands, augmented the revenue, but made many enemies among the nobles, and left a full treasury to his son Charles XII (q. v.), who reigned from 1697 to 1718. But all his treasures were expended, together with the blood of his subjects, in protracted and useless wars. (See *Gœrtz*, and *Northern War.*) On the death of Charles, in 1718, Ulrica Eleanora, his youngest sister, the last of the house of Wasa, succeeded to the throne, less by hereditary right than by the voluntary choice of the states, who revived the ancient form of government, but with greater limitations of the royal power. The ruling party, by the peace of Stockholm, in 1719, ceded Bremen and Verden to the elector of Brunswick, and, in 1720, Stettin and Hither Pomerania, as far as the Peene, to Prussia; by the peace of Nystädt, in 1721, Livonia, Esthonia, Ingria, Wiburg, and a part of Carelia, to Russia; and, by the peace of Fredericksborg, with Denmark, in 1720, renounced all claim to the exemption from sound dues. Frederic of Hesse, the husband of Ulrica Eleonora, who assumed the government, with the consent of the states, and administered it from 1720 to 1751, was a weak prince, ruled by his nobles; and the council of state made itself entirely independent. Instigated by France, he engaged in a new war with Russia (1741), for the recovery of the provinces that had been ceded to Russia. By the peace of Abo (q. v.), which concluded the war, in 1743, he lost part of Finland, to the river Cymmene; and, as the queen was childless, the succession was settled on Adolphus Frederic, duke of Holstein and bishop of Lübeck. Adolphus Frederic, in whose person the house of Holstein ascended the Swedish throne, reigned from 1751 to 1771. He took part feebly in the seven years' war. (q. v.) The kingdom was distracted by the factions of the hats and caps, and the regal authority became a mere shadow. Gustavus III (q. v.) at length happily threw off the yoke of the aristocracy. He restored to the kingdom its strength and its honor; but, in 1792, he fell a victim to a conspiracy. His son, Gustavus IV (q. v.), ascended the throne under the guardianship of his uncle, but lost it in 1809. His uncle, who assumed the government under the title of Charles XIII (q. v.), gave the kingdom a new constitution, and chose, for his successor, prince Christian Augustus of Sleswic-Holstein-Sonderburg-Augustenburg, who adopted the name of Charles Augustus. He concluded the war with Russia by the peace of Friedrichshamm, in 1809, by which he ceded all Finnland, and, in 1810, renewed the previous relations of the kingdom with France. The crown-prince, however, died suddenly; and the diet of Oerebro chose, for his successor, the French marshal Bernadotte, prince of Ponte Corvo, who was adopted by the king under the name of Charles John. (See *Charles XIV*.) Sweden now declared war against Great Britain; but the pressure of the war, and the increasing encroachments of France, produced a change of policy (1812), and she joined the allies against Napoleon. (See *Charles XIV*, and *Russian-German War*.) By the peace with Denmark, concluded at Kiel (Jan. 14, 1814), Sweden received Norway as an independent, free, indivisible and inalienable kingdom, in return for her possessions in Pomerania and the island of Rügen.

Since the union of Norway and Sweden, concluded by the storthing at Christiania, Oct. 18, 1814 (see *Norway*), this double kingdom has combined, under one king and two very different constitutions, two proud and free-spirited nations, each jealous of its peculiar privileges. The political condition of Sweden and Norway forms a permanent partition between them: there, a jealous aristocracy is perpetually watching over its ancient privileges; here, the democracy struggles to defend its new-born rights. In both kingdoms, the peasantry and the citizens hold a higher rank than in most European states. In Norway, there is no hereditary nobility, and the veto of the king is only conditional. These circumstances seem to separate the Scandinavian peninsula from the European system of politics, with which, however, it is closely connected. To the discrepancy of domestic and foreign relations is added an incessant struggle with the climate and soil, with obstructions in trade, depreciated paper money, and an oppressive public debt. Charles XIV is a sovereign suited to the country and the age. Looking steadily to the future, he meets present difficulties with firmness and wisdom. He possesses the affections of the majority of the nation, and especially of the army; and has imbued his successor with his own principles. The crown-prince, Oscar, lives and thinks as a Swede. He met with a distinguished reception, at Verona, at the time of the congress, Oct. 26, 1822, where the visits of the two emperors seem to confirm the opinion that his succession to the throne was guarantied by Russia. Soon afterwards, the marriage of the prince with Josephine Maximiliana, daughter of Eugene Beauharnais, duke of Leuchtenberg (whose wife was Augusta Amelia, princess of Bavaria), took place at Stockholm, June 19, 1823. The first fruit of this marriage, Charles, born May 3, 1826, is styled duke of Schonen; the second, Francis, born July 9, 1827, duke of Upland; the third, born 1829, duke of Gothland. Some intrigues and conspiracies for the restoration of the family of Wasa have occurred in Sweden; but the estates took this opportunity (1823) to give the king and the crown-prince the strongest assurances of fidelity. The king and Swedish estates, in order to interrupt all communication with the exiled family, determined to transfer to it all its property remaining in the kingdom, and to extinguish its pension by the payment of a certain sum mutually agreed upon by the two parties, which was done in 1824. The personal character and constitutional principles of the king have secured him the love and fidelity of his subjects. He often visits the remote provinces of his two kingdoms, relieving distress wherever he finds it, usually from his private purse, and takes no important measures without being assured of the concurrence of the estates, which meet every six years, and of the majority of the nation.

It has been the object of the government in Sweden to give unity to the administration; and the minister at the head of each department is responsible for its measures. The constitutional committee of every diet has the right to examine the journals of the cabinet, to discover any violation of the constitution. Since 1821, the judicial power has been separated from the executive. The administration of justice has been essentially improved. The new Swedish constitution of June 7, 1809, is given in the second volume of Constitutions of the European States (in German, Leipsic, 1817). To separate the royal power more completely from the judicial, the king proposed, in the diet of 1823, the abolition of his right to preside in the supreme court. The proposal of the estates, in 1823, to make their sessions and those of the supreme courts public, was, however, negatived by the king. The finances and credit of the state were restored by careful management and great economy. The public accounts were rigidly inspected, and reduced to perfect order, and government soon had it in its power to pay off, annually, $120—150,000 of the national debt, which amounted, in 1820, to 6,500,000 Swedish rix dollars. The diet of 1823 fixed the total expenditure of Sweden at 8,121,357 dollars banco. Still complaints were made of the expenses of the court, and the state of the currency stood in need of further changes. The organization and discipline of the army have been improved, while the burden of military service and the expenses of the military establishment have been diminished. The army is composed of 45,203 men, and the whole armed force amounts to 138,569 men, exclusive of the naval service. The number of officers in the army is very small: there is not more than one officer to forty men; while, in the French army, there is one to every ten men. The navy consists of twelve ships of the line, thirteen frigates, sixty smaller vessels, and a Scheeren fleet of 342 sail. (See *Scheeren.*) The Swedish soldiers are employed, in peace, in building canals, roads, forts, and other public works. The freedom of the press is established by law, but under such restrictions that it is little more than nominal. Still the journals often speak with great freedom, and exercise considerable influence upon public opinion. Political clubs and friendly societies cannot exist without the consent of the government; and a society modelled on the plan of our common debating societies, was put down. In conformity with the principles of the prohibitive system, which prevailed in 1820, but has since been modified, the government attempted to encourage domestic industry by laying restrictions on foreign manufactured articles. Foreign manufacturers were encouraged to establish new branches of industry in Sweden by bounties. The abolition of guilds, which was attempted under the direction of the king, was not accomplished. The whole system of policy in regard to commerce and manufactures was abolished in 1821, and a new tariff has been adopted since the beginning of 1825. Since 1820, the navigation of the rivers, especially in the northern provinces, has been improved. Steam navigation has also been introduced, and canals have been constructed.

The government of Norway is prompt and regular, and much more economical and simple than that of Sweden. The organization of the courts, and the administration of justice, are also better; thus, in the supreme court of Christiania, publicity of procedure and oral pleadings have long been established. The families of the ancient national nobility in Norway had gradually sunk to the rank of peasants, while Danish and German families had taken their place, by being appointed to offices of government formerly held by Norwegian noblemen. The constitution of 1814 prohibits the creation of counties, baronies, &c., and admits no hereditary rank. The Norwegians further wished to abolish the existing nobility; and resolutions to that effect passed the Norwegian diets of 1815 and 1818; but the royal sanction could not be obtained for them. In the storthing of 1821, a majority voted a third time for its abolition; and the measure, having been approved by three successive storthings, became a law without the royal sanction. The king asked for a delay, at least, in the measure, but it was refused, and endeavored to obtain the right of creating a new nobility in Norway, as a reward for distinguished services; but without success. The storthing also rejected a proposal of the king to establish a jury for the trial of offences of the press, a censorship and jury not being consistent with the legislation of Norway, although offences of the press were, in fact, punished by imprisonment, and, in 1825, by a fine. It was not till after a long opposition, that the storthing finally consented to pay, within eight years, the Norwegian debi to Denmark, whose demands were supported by Austria, Russia, Prussia and England. These proceedings induced the king to visit Christiania in person; and Swedish and Norwegian troops, with a squadron of ships, were assembled in the neighborhood of the capital, seemingly with the purpose of overawing the storthing. No measures, however, were taken; and it is said that a note from the emperor Alexander, as a guarantee of the peace of Kiel, dissuaded any innovation upon the constitution of Norway. The acts of the storthing, during the session of 1824, attracted much attention even in foreign countries. The king had appointed his son viceroy of Norway, and thus made him commander-in-chief of the land and sea forces. The presence of this prince was, perhaps, designed to countenance the propositions for changes in thirteen sections in the constitution, namely, the introduction of the absolute veto; the creation of a Norwegian nobility; the appointment of the president of the storthing by the king, &c. But these and other proposals were unanimously rejected by the storthing, May 22. (See the *Norwegian Constitution*, in the 2d volume of the European Constitutions.) When the crown-prince prorogued the storthing, Aug. 9, 1824, he expressed a hope that the wishes of the government would meet with more favor in a future session; but, in the session of 1827, the proposition for an absolute veto was unanimously rejected. The crown-prince was then recalled to Stockholm, and his appointment as viceroy of Norway was revoked. The king and queen visited Christiania in September, 1825; and their presence in that city in the year 1827, at the fifth regular storthing, and again in 1828, gave the monarch an opportunity to witness anew the love and faith of his Norwegian subjects. But their attachment to their constitution was as warmly displayed on the anniversary of the establishment of the Norwegian constitution, May 17, 1827. (See *Norway*.)

In 1822, the free navigation of the Black sea by Swedish and Norwegian ships was obtained from the Porte, and a treaty was concluded with Great Britain, in 1824, for the suppression of the slave-trade. In 1828, a treaty of commerce and navigation between Sweden and the U. States placed the vessels of the contracting powers on the footing of national vessels in the ports of the respective nations. —See Geijer's *History of Sweden* (in Swedish, 1826); Ekendahl's *History of the Swedes* (in German, 1827 seq.).

We have already given an account of the present condition of Norway in a separate article. Sweden is a hereditary monarchy, limited by estates. They are divided into four ranks, the nobility, clergy, citizens and peasantry. The nobility are subdivided into three classes, the lords, including counts and barons, the knights, or those whose ancestors have held the place of royal counsellors, and the simple noblemen. The clergy is represented by the bishop of each diocese, and the citizens and peasants, the latter comprising only the free peasants of the crown, by deputies. The sovereign disposes of the higher civil and military offices, from which foreigners are excluded by law. Without the consent of the states, the king cannot enact new laws or abolish old ones. The constitution requires the king to assemble the states once in five years. The legislative power in Norway is lodged in the storthing, which meets every three years. A viceroy, or governor-general, resides at Christiania. The revenue and troops of the two kingdoms are kept distinct. The fortifications of Norway are only in part occupied by Sweden. For the levying of taxes, the consent of the states is necessary, and all the troops and officers are required to take the oath of allegiance to them, as well as to the king. Since 1798, the sovereign has had the right to make war and peace, to regulate the judiciary, and to conduct the general administration without restraint. The succession to the throne is hereditary in the male line according to the law of primogeniture. On the extinction of the male line, the estates have full power to elect a king. The sovereign is of full age in Norway at the completion of his eighteenth year, and in Sweden at the close of his twentieth. Before his coronation, the king is required to take the inaugural oath, and to subscribe an engagement to maintain inviolate the Evangelical Lutheran religion. A Swede who abandons the Lutheran religion loses his civil rights. The kingdom contains one archbishop, thirteen bishops, and 192 provosts. The principal administrative bodies in Sweden are, 1. the council of state, the highest deliberative body, consisting of nine members; 2. the committee on the general affairs of the kingdom, consisting of eight members; 3. the royal chancery, which is under the king's immediate direction, and superintends the general affairs of state, foreign and domestic. Connected with it is the royal cabinet for foreign correspondence, the bureau of the president of the chancery and the archives of the kingdom. The finances are managed by a board of finance. The war and navy boards have the control over those departments, under the presidency of a general and the high admiral. The highest tribunal of justice is the supreme court, the president of which, in the king's absence, is chief magistrate of the kingdom. The decisions of this court are regulated by the code of 1731, as revised in 1778. The ecclesiastical affairs are conducted by the consistory, the president of which is the first court preacher. The medical institutions are directed by the *collegium medicum*. All the high offices in the Swedish army have hitherto been venal. The present government has made great exertions to abolish this abuse, so that the road to promotion is now open alike to rich and poor. In Sweden, there are five orders of knighthood: 1. the order of Seraphim, founded, according to tradition, by king Magnus. History shows that it existed in 1336. It was renewed by king Frederic I, April 17, 1748. Its motto is I. H. S. 2. The order of the Sword, according to tradition, was instituted by king Gustavus I, and was renewed, April 12, 1748, by king Frederic I. 3. The order of the North Star is traced by some to the age of Odin. King Frederic I renewed it April 17, 1748. The motto is *Nescit occasum*. 4. The order of Wasa, or Vasa, founded May 26, 1772. 5. The order of Charles XIII, instituted by the king, May 27, 1811, is bestowed only upon freemasons of the higher degrees. Agriculture and manufactures have flourished since the accession of the present king. In Sweden, there are about 900 manufactories of cloth, silk, cotton, woollen, linen, leather, sugar, tobacco, glass, mirrors, watches, porcelain, paper, marble, porphyry, and of metals, in which the iron works hold the most important place, yielding annually 72,000 tons of bar iron, and 10,000 tons of manufactured iron. According to the tabular views of Sweden, the value of its annual productions is estimated at 88,000,000 Swedish bank dollars, including wooden ware to the value of half a million; manufactures, more than 12,000,000; trade and navigation, about 14,500,000 dollars. The iron works of Norway (the most important are at Laurvig and at Moss) yield 8000 tons of iron per annum. Many vessels are built, both in Sweden and Norway, for foreign countries, and large quantities of wood are worked up into boards (especially on the river Drammen), laths, joists, masts, &c. The situation is favorable to trade, which is carried on with the nations bordering on the Baltic, Great Britain, Holland, France, in the Mediterranean sea, and with the U. States. A Swedish East India company trades to China. Articles of export are wood, boards, ship timber, joists, tar, pitch, potash, iron, steel, copper, herrings, whale-oil, peltry, &c. The imports consist mostly of grain, wine, resins, oil, salt, wool, flax, hemp and groceries. In 1818, the use of coffee was prohibited. The government of Sweden appropriates 4,000,000 Swedish bank dollars annually to purchase corn; but no such provision is made in Norway, whence the scarcity of corn is more sensibly felt, and, at the same time, the high duties render the importation of grain very difficult. In 1818, Sweden had about 1100 trading vessels, with 9200 sailors, and Norway about 800, with 6500 sailors. Half of them can be fitted out in war as privateers. The chief commercial towns in Sweden are Stockholm, Gottenburg, Nordköping, Gefle, Carlscrona, Malmoe, Landscrona, Ystadt, and Udawalla; in Norway, Bergen, Christiania, Drontheim, Christiansand, Stavanger, Drammen, and Fredrickshald. In 1818, four new roads were constructed through Darlecarlia and Helsingland, for the promotion of trade. Two of them lead to Norway. There are likewise several canals; for example, the Trollhätta canal, round the falls of the Götha-Elf, whose perpendicular descent is estimated at 130 feet; and the Götha canal, joining the Baltic with the German ocean, which was completed in 1827. (See *Canals*.) The whole distance from Gottenburg to Söderköping, on the Baltic, is 240 miles; of which 186 are occupied by the Götha-Elf, the Trollhätta canal, and some lakes. A third canal is that of Södertelje, thirteen miles from Stockholm, by which a new junction of lake Mälar with the Baltic was made in 1819; thus bringing twenty towns in the interior into connexion with the sea, and facilitating the commerce of the capital. Under the reigns of Gustavus Adolphus, Christina, and Charles XI, manufactures of iron, brass, steel, leather, soap, woollen, and silk, first became prosperous; but the wars of Charles XII involved the whole in a general ruin. The manufactures of the Swedes, however, recovered themselves; and they produce all wares (of which the raw materials are not too high in other countries), as far as the want of hands, occasioned by numerous wars, permits. Nevertheless, when we compare the productions and revenue of Sweden with its extent, in which it yields only to Russia, we must pronounce it the poorest country in Europe. Excellent institutions have been established, especially in Sweden, for the instruction of the people. The university founded in 1476, at Upsal, with twenty-four professors, has an extensive library, a botanical garden, a cabinet of coins, and of natural history, an observatory, &c. The university erected at Lund, in 1666, with twenty-three professors, has also a library, a museum, a botanical garden, and an observatory. The two universities, in 1829, contained 2156 students: they are under the direction of eleven bishops and the archbishop, the heads of the clergy: the same protection is shared by eighteen gymnasia. There are common schools in every town of the kingdom. At Carlsberg there is a military academy; at Skara, a veterinary school; at Stockholm, a military academy. In 1739, an academy of sciences was instituted at Stockholm, and, in 1753, the academy of fine arts, which was divided into the Swedish academy and the academy of fine arts, and afterwards reorganized. In Norway, a few years since, the university of Christiania was established, and in 1827 it contained 549 students. It has a library, a botanical garden, and collections of natural history. At the same place there is a military academy and a commercial institute. At Kongsberg, or Conisberg, there is a mining school, and at Drontheim a seminary for young Laplanders. Norway has also five gymnasia, and two seminaries for school-teachers. The village schools are few.—See Brooke's *Travels through Sweden, Norway and Finmark* (London, 1823, 4to.); Schubert's *Travels through Sweden, Norway, Lapland, Finland and Ingermanland, or Ingria* (in German, 1823, 3 vols.); Everest's *Journey through Norway*, &c. (1829).

Swedish Language and Literature. On account of the distance of Sweden from the parts of Europe which were early civilized, Christianity did not gain a firm footing throughout the country until the middle of the twelfth century; and even then civilization followed but slowly, because of the incessant feuds of factions and families, which continued for centuries. It derived little aid from the clergy, who were numerous, but rude, and mainly bent on securing their own power and influence, or from the kings; and the favorable circumstances which, in some other countries, enabled it to develope itself unaided, did not exist in Sweden. If this dark period was enlightened by native sagas, their light is lost to us. The writings of the foreigners Saxo (q. v.) and Snorro (see *Sturlason*) are the only known sources of information respecting the ancient times of Sweden; and their records are but meagre. The Swedish Chronicle of Erik Olafsen, belonging to the end of the fifteenth century, and written in Latin, follows too closely the rhymed chronicle and fables of John Magnus (1488—1544) to be considered of importance, in regard to the history of this early period. But the historical investigator may learn much from the ancient provincial and country laws, and from the *Kununga oh' Höfdinga Stirilse* (The Government of Kings and Chiefs)—a picture of the princes of the end of the fourteenth century. The Gothic Union, founded by Geijer in 1811, has awakened an interest for domestic antiquities. The Aurora Union, established by Atterbom in 1808, had prepared the way for it. Jacob Adlerbeth (son of the poet mentioned below) is at present the most active member of the Gothic Union; he is the editor of the Iduna. Afzelius, editor of the Eddas in the original, and of the old popular ballads, is also indefatigable.

From the time of the reformation more monuments exist for the history of the Swedish language. The reformation; the translation of the Bible (the Old Testament by Lor. Andreæ, Stockholm, 1526, folio, and the Old and New Testament by Ol. and Lorenz Petri, Upsal, 1541, fol.); the various commercial and political relations of Sweden with Germany; its monarchs of German origin; and even the wars with that country,—caused a leaning towards the German in the Swedish language, which derived some support from the translation of the Bible after Luther's version, and from the other translations of German works which soon followed. In the middle of the seventeenth century, and at later periods, the Swedish literati (for instance, Ihre and Rudbeck) turned their attention towards the remains of ancient northern times; but they wrote in Latin; and the short reign of Christina led to the study and imitation of foreign models, particularly French, which maintained itself in the unquiet period that followed, whilst the language of society was neglected. Louisa Eleonora, sister of Frederic the Great, awakened an interest for polished conversation. She founded an academy of sciences in 1753, which published its transactions in the language of the country, and thus attracted the regard of the scholars of Europe to the Swedish idiom. In this period Olaus Dalin attempted to give to Swedish prose a flexibility and brilliancy ill suited to the northern idioms. This style, borrowed from the French, maintained its place for some time, but could not be of long duration. Gustavus III, though the pupil of Dalin, and expressing himself in French with greater ease than in Swedish, strove to restore the dignity of the Swedish idiom, by the foundation of the Swedish academy in 1786; but the forms which he prescribed to this society, his own example, and the favor bestowed on foreign customs and modes of thinking, made the labors of the society of little avail. The language had certainly gained, during this period, in extent and polish; but it had been also burdened with so much foreign matter, that a very thorough renovation was required. The first steps were taken by a society of young men at Upsal, in 1803. A thorough study of classical literature and reflection on the labors of foreign nations, particularly Germans, in the department of criticism, led them to a close investigation of the state of literature in their country, and to a deep disrelish for the existing French taste. A patriotic feeling was awakened; the old historical sources and the first monuments of the Swedish language were now studied, and the more recent works on the Swedish language, e. g. Silverstolpe's (died 1816) Attempt at a general Grammar (Stockholm, 1814), Broocmann's *Lärobok* (Stockholm, 1813), and especially Collner's *Försök i'Svenska Sprökläran* (Stockholm, 1812), and *Lärobok i Sv. Sp.*, by the same author, depart considerably from the standard of the Swedish academy. The study of the Icelandic, which gains daily in interest; Winter's *De Origine et ant Linguæ Suec. Monum.* (Stockh., 1802, 4to.), and Linfor's Introduction to Icelandic Literature and its History in the Middle Ages (1804), mostly from Danish sources; Litjegrén's *Nordiska Fornäld Hjelte Sagar* (Stockholm, 1817), and *Nordiska Fornlemningar* (Stockh., 1819—22),—must have an important influence upon the developement of the language, particularly at a period in which so much attention is paid to the monuments of the ancient history of the country. Yet there are many vestiges of the French influence in the Swedish literature. It is much to be regretted that modern Swedish poets have paid so little attention to the old national songs, the remains of which are now zealously sought for; e. g. Ismal's Marriage, an ancient Faroe song, recast by Gumælius in the tenth number of Iduna; also the *Svenska Folkvisor* (Swedish Popular Melodies), edited by Geijer and Afzelius (Stockh., 1814—16, 3 vols.), and the Swedish Popular Harp, with an appendix containing Songs and Melodies, by Studach (Stockh., 1826). If poets of talent had employed themselves in the composition of sacred hymns after the reformation, perhaps poetry would have risen above a learned school-exercise, or an entertainment of Swedish scholars, and gained a hold on the hearts of the people.—For information respecting that early period of poetical activity, we refer to C. Carleson's *Försök til su Skalde Konstens uphjelpande Hock* (Stockh, 1737, 2 vols., 4to.).—Olof Dalin, who was born in 1708, at Vinberga, in Holland, gave an impulse to Swedish literature by his periodical, called *Argus* (1733—34), which appeared when the country was much distracted by the factions of the nobility. At this period of degeneracy and humiliation, particularly of the higher classes, a zeal for science prevailed in Sweden, hardly equalled at any subsequent period. We need only mention Linnæus (1707—1778), Ihre and Lagerbring. At this time, Dalin attracted the attention of the Swedish public by his wit, polish of language, and accommodation to the French taste, which he did much to fix in the literature. His poems (best edition, 1782, 2 vols.), served to entertain the court ladies of Louisa. His prose works—e. g. his History of the Realm (Stockh., 1747, 3 vols., 4to.)—are more to be commended for their style than for their critical research. Dalin died in 1763. He had made poetry a kind of court entertainment, cultivated by circles of *beaux esprits* (*vittre*), but having little of an elevated character. Under such circumstances, madame H. C. Nordenflycht (died 1763) received the name of the Swedish Sappho (*Utvalda arbeten*, Stockh., 1778). But count de Creutz (q. v.) and his friend Gyllenborg deserve to be distinguished. The historical epic of the latter (he died in 1808)—*Taget öfver Bält* (Stockh., 1800)—as well as his didactic poem—*Försök om Skaldeconsten* (Stockh., 1798)—will preserve his name in the history of Swedish literature (*Skrifter*, Stockh., 1795, seq.). The contemporaries of Gustavus III, who were also his literary confidants—Kellgrén (died 1795), Oxenstierna, the translator of Milton (died 1818), and Leopold (secretary of state), followed the impulse given by Dalin. Gustavus himself took part in the endeavors of Swedish authors; but the narrowness of his views, and his disposition for show in language, tended rather to check than assist the developement of talents. Kellgrén, however, did most to prepare the public for the change which was beginning, by deriding the mania for foreign literature, in his periodical, the Stockholm Post (1778, seq.). Still more independent, in his poems, was Bened. Lidner (died 1793), whose poems, full of feeling and elevated thought, were strongly contrasted with the passions which put an end to his life. Thorild also (1759—1808) assisted in giving a favorable direction to poetry (*Saml. Skr.*, Upsal, 1819, 2 vols.). But Charles Mich. Bellmann (born 1741, died 1795) is the first lyric poet of Sweden. His pictures of Swedish life are so true; their colors so fresh; they exhibit such fulness of imagination and purity of feeling,—that to him, before all others of his time and nation, is due the fame of an original and national bard (*Bacchi Tempel*, 1783); *Sions Högtid* (1787); *Fredman Epistlar och Sånger* (1791); *Fr. Handskrifter* (Upsal, 1813); *Skaldestykken* (Stockh., 1814, 2 vols.). Compared with his productions, Adlerbeth's works are intellectual, but cold (*Poetiska Arbeten*, Stockh., 1802), and Shenhammar's verses mere studies. The change in Swedish belles-lettres, after these preparatory attempts against the literary despotism of the Swedish academy, was first brought about by that association of young literati, in 1803, at Upsal, who formed the *Vitterhetens Vänner* (Friends of Science). The study of the German works of A. W. and F. Schlegel first excited the zeal for a thorough criticism; and Askelöf's *Polyfem* gave the signal for the storm which broke out against the obsolete prejudices of the Swedish academy. Atterbom (q. v.) labored with particular success, for instance, in his *Phosphoros* (1810—1813). Hammarsköld* embraced the views of Atterbom, in his Lyceum, a periodical; and the Gothic Union, above mentioned, contributed to the furtherance of their views. Swedish poetry, since these efforts, is more vigorous and elevated. Isaiah Tegnér, bishop of Wexiö, in Småland, is a lyric and pastoral poet of genius. He lately wrote *Frithiofssaga* (three times translated into German). We should also mention the poems of Geijer and Atterbom, likewise Francen's lyric Idyls—*Saml. Arb.* (Stockh., 1819)—the writings of Stagnelius, who died in 1822—*Liljor i Saaron* (Stockh., 1821; complete works, edited by Hammarsköld, in 1824)—Dalgrén's successful imitation of Bellmann, particularly in his *Mollbergs Epistlar* (Stockh., 1819); Beskow's Poetical Essays, (collected Stockh., 1818—1819); and the translations by Regnér (died 1819), as well as Palmblad's works. These show that great progress has been made in the art of versification. The drama is less cultivated. It remained foreign to the people, and only served for the entertainment of the court. The productions of Dalin, Gustavus III, Adlerbeth, Gyllenborg, Leopold, were insignificant, and mostly in a foreign manner; Hallmann's humor was too coarse; Lindegrén's attempts in Kotzebue's manner are no longer liked; and Ling alone seems to afford some hope for this branch of poetry. His Agnes (Lund, 1812) has some fine lyrical passages, though it is void of true dramatic life. The numerous class of female Swedish authors and poets is mostly confined to novels. Euphrosyne (Christ. Julia Nyberg) has written lyrical poems, full of tenderness (*Dikter of Euphrosyne*, Upsal, 1822). Charlotte Berger's productions betray their French models (*De fransca Kriegsföngame*, Stockh., 1814); *Trollgrottan* (1816); *Ruinerna vid Brahelms* (1816); Albert and Louisa (1817). Livijus has written the novels, the Knight St. Jörrn, the Pique-Dame, &c. Before them, Dalin's elegance and affectation were applauded at the expense of truth and accuracy. The novels of J. H. Mörk (1714—1763)—Adalrik and Gothilda (Stockh., 1742), and Thekla (1749)—were not popular, though they directed attention to domestic history. Gustavus III showed skill in the oratorical style, so that his anonymous *éloge* on Torstensohn gained the prize of the academy; but his French education by count Tessin and Dalin (he hated nothing more than German and tobacco) had made him too fond of rhetorical phrases, which easily degenerate into empty declamation. The great change of taste was not without effect upon this branch of writing. Swedish pulpit eloquence is in great want of good models, and the printed sermons of bishop Lehnberg (died 1808), which were published in Stockholm in 1809—1813, and his occasional discourses (1819), did not supply the want; but we find subjects of general interest treated with considerable talent in Swedish newspapers. Boëthius (died 1810) strove to diffuse Kant's principles. Schelling's works have been translated. Geijer's History of the Swedish Realm (1824 seq.) is an addition to the treasures of European literature. Geijer and J. H. Schröder, sub-librarian at Upsal, have united to edit the *Scriptores Rerum Suecicarum Medii Ævi*. About fifty newspapers are published in Sweden, one literary gazette, and several magazines; among the latter, since 1819, *Svea*, at Stockholm—a periodical devoted to science and the arts. In Norway, there were published, in 1827, three scientific magazines and twelve newspapers, devoted to politics and general information, eight of them at Christiania. The collections of two literary societies are important, particularly as respects ancient northern literature—those of the Scandinavian literary society, and those of the royal Norwegian society of science, in the nineteenth century. The natural sciences are particularly cultivated in Christiania, by men like Lund, Hansten, Maschman, Schielderup, and others. Falsen, formerly attorney-general of the kingdom of Norway, has published a History of Norway under the Government of Harald Harfagar and his male Successors (Christiania, 1824,4 vols.). The works printed in Sweden, during the year 1818, amounted to 362, of which 91 were translations. The *Notices sur la Littérature et les Beaux Arts en Suède*, by Marianne de Ehrenström (Stockh., 1826), are somewhat panegyrical.

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* Hammarsköld has been much used in this article.

Swedenborg, Emanuel, the most celebrated mystic of the eighteenth century, was born at Stockholm, in 1688. Educated by his father, Jasper Swedberg, bishop of West Gothland, in the severe doctrines of Lutheranism, which prevailed in Sweden, his ardent and imaginative mind soon took a religious turn. His studies embraced theology, philosophy, mathematics, and the natural sciences. His first poetical efforts appeared, in 1710, at Skara, under the title of *Carmina Miscellanea*. The period from 1710 to 1714 he spent in scientific travels through England, Holland, France and Germany, and visited the universities of these countries. He then returned to Upsal, and published his *Dædalus Hyperboreus* (six numbers, containing experiments and observations in mathematics and natural philosophy). He had several interviews with Charles XII, who in 1716, appointed him assessor in the mining college, and formed an acquaintance with Christoph Polhem, the Archimedes of Sweden, whose experience was of great service to him. The invention of a rolling machine, by means of which he conveyed a shallop, two galleys and four large boats (which Charles XII used, in 1718, to transport cannon to the siege of Frederickshall) five leagues, over mountains and valleys, from Strömstadt to Idefjal, and his treatises on algebra, the value of money, the revolutions of the planets, and on tides, gained for him the favor of the government. Queen Ulrica raised him to the rank of nobility in 1719, upon which occasion his name was changed from Swedberg to Swedenborg. In the discharge of the duties of his office, he visited, in 1720, the Swedish mines, and, in 1721, the Saxon, and wrote some valuable treatises on them. He likewise made similar journeys to the mines of Austria and Hungary. A collection of his works on philosophy and mineralogy (*Opera Philosophica et Mineralogica*) was published in 1734 (in 3 vols., folio), and attracted much attention among the scholars of Europe. He was chosen a member of the academies of Upsal and Petersburgh. The academy at Stockholm had already elected him an honorary member, in 1729. He increased his stock of knowledge by new travels to France and Italy, in 1738—40. The *Œconomia Regni Animalis*, which he published after his return, in 1740—41, contains the application of the system of nature, unfolded in his philosophical works, to the animal creation. The principle of a necessary emanation of all things from a central power, is the basis of this system, which is ingeniously unfolded, and illustrates the extent of the author's reading. It is explained particularly in the *Principia Rerum Naturalium*. Swedenborg was first introduced to an intercourse with the spiritual world, according to his own statement, in 1743, at London. The eyes of his inward man, he says, were opened to see heaven, hell, and the spiritual world, in which he conversed, not only with his deceased acquaintance, but with the most distinguished men of antiquity. That he might devote all his life to this spiritual intercourse and his mediatorial connexion between the visible and invisible world, he resigned, in 1747, his office in the mining college, which he had hitherto discharged with punctilious exactness, and refused a higher appointment that was offered him. The king still paid him his full salary as a pension. With no occupation but to see and converse with spirits, or to record celestial revelations, he now resided alternately in Sweden and England. The theological works which he wrote in this period, he printed at his own expense. They found multitudes of readers; and while he was an object of the deepest veneration and wonder to his followers, his statements were the more mysterious to the rest of the world, because he could not be suspected of dishonesty, and exhibited, in other respects, no mental aberration. All respected him as a man of profound learning, an acute thinker, and a virtuous member of society. His moderation and his independent circumstances made it impossible to suppose him actuated by ambitious or interested views; his unfeigned piety gave him the character of a saint, who lived more in the society of angels than of men. In those trances, during which, as he said, he conversed with spirits, received revelations, or had views of the invisible world, he seemed like one in a dream: his features were stamped with pain or rapture, according as heaven or hell was opened to him. In common life, he exhibited the refinement of polished society; his conversation was instructive and pleasant; his personal appearance was dignified. Though he was never married, he esteemed the company of intellectual women, and studiously avoided eccentricity. His pretended revelations, which he published at first freely, though not boastingly, but in later years with more reserve, and the mysterious doctrines contained in his writings, drew upon him the ill will of the clergy; but the principal bishops favored his writings, and he enjoyed the protection of king Adolphus Frederic. With uninterrupted health, he attained the age of eighty-four years, and died of apoplexy, at London, March 29, 1772. To the day of his death, he was fully persuaded of the reality of his visions and divine inspirations. This faith became, at length, a fixed principle in his mind, which was every day more and more detached from sublunary things. When this illusion had once gained ascendency over him, his own prolific mind, and the writings of earlier mystical theologians, furnished him with materials enough to form such a spiritual world as he pleased. His descriptions of it, even in the minutest points, bear the stamp of the age in which he lived, and those views of the external world which he had gained as a natural philosopher; his spirits converse with a distinct individuality, and the family likeness of his interpretations of the Bible, with the explanations and allegories of the earlier mystics, is every where obvious. But whatever we may think of his revelations, his purposes were praiseworthy—to collect a church of religious persons, and preserve them from the irreligious and demoralizing systems of the age by the diffusion of his religious and edifying works. In the moral parts of his writings, we meet with the purest doctrines, and with passages of peculiar religious elevation; and, though he wrote in a bad style and in careless Latin, he deserves rather to be classed among religious poets than among theologians. The stories of his prophecies and supernatural knowledge of events of actual occurrence—for instance, the information which he gave, in Gottenburg, of the conflagration at Stockholm, the hour when it happened—are curious from the amount of testimony adduced in their support. The doctrines of the sect which bears his name, are founded on the Bible and the following books, written by Swedenborg, in Latin, between the years 1747 and 1771: *Arcana Cœlestia; De Cœlo et Inferno; De Telluribus; De Ultimo Judicio; De Equo Albo; De Nova Hierosolyma et ejus Doctrina Cœlesti; De Domino; De Scriptura Sacra; De Vita; De Fide; De Divino Amore et Divina Providentia; De Amore Conjugiali; De Commercio Animæ et Corporis; Summaria Expositio Sensus Prophetici; Apocalypsis Explicata; Apocalypsis Revelata; De Vera Theologia Christiana.* Of the Bible, they consider canonical only the Pentateuch, the book of Joshua, the book of Judges, the books of Samuel and of Kings, the Psalms, the prophets, the Gospels, and the Apocalypse. The members of this sect are not distinguished by dress, or by any outward sign, from the rest of the world. In Sweden, where they are estimated at 2000 persons, they are obliged to keep their opinions private. In England, where, since 1783, they have had chapels in London and in many of the large cities, they are openly tolerated, like the other dissenters; and this has contributed to increase their numbers. The members are mostly people of the middle and higher ranks. Charles XIII, king of Sweden, when duke of Sudermania, was, for a time, attached to them. In France, Germany and Poland, the adherents of this sect are few; in the East Indies, North America and South Africa, there are many churches. Without acknowledging any general government, the churches all administer their own affairs. The famous travellers Sparrmann and Nordenskiold are among their disciples; and the latter, with Afzelius of Sweden, founded a church at Sierra Leone, in Africa. For this and other African colonies, and for the abolition of the slave-trade, the Swedenborgians have done much. In the African society at London, their influence is very great. They are constantly laboring to diffuse their doctrines by editions of the works of Swedenborg, and by several periodical works in England, and one in Boston, in this country.

We shall now give a short statement of the doctrines of Swedenborg, in the language of his followers:—The principal tenets of Swedenborg are these: He teaches that there is one God, the Lord Jesus Christ, in whom is a divine Trinity, which is not a Trinity of persons, but is analogous to that which exists in man, the image and likeness of God. In man is a soul or essential principle of life, a form or body, natural in this world and spiritual in the spiritual world, in which the soul exists, and by which it manifests itself in operation: these three, soul, form and operation, are as the Father, Son, and Holy Spirit. And as some affection is within all thought, and causes it, and forms it, and as all action is the effect of volition, or affection operating by and through thought, so the Father is the divine love, the Son the divine wisdom, and the Holy Spirit the divine operation. So, too, as every effect must be produced by some cause, and for some end, end, cause and effect consist in all things, as a Trinity. This Trinity Swedenborg does not consider as arbitrary and figurative, but as most real, grounded in the divine nature, and existing from the divine nature in all things. With regard to regeneration, Swedenborg teaches, that, as the Lord glorified his humanity by resisting and overcoming the infernal influences which assailed it, so man, by following the Lord in his regeneration, through his divine grace, may gradually become regenerate; that is, receptive of good affection and wisdom from the Lord through the heavens; and in proportion as his sins are resisted and put away, he becomes thus receptive more and more perpetually. Swedenborg teaches that the Lord foredooms none to hell, condemns none, and punishes none; that his divine grace is constantly with all, aiding those on earth who strive to coöperate with him, sustaining and leading forward angels in heaven, and endeavoring to preserve the devils from the evils which they love and seek; but that he always perfectly regards and preserves the free will of every one, giving to every one the utmost aid that will leave him at liberty to turn himself either to heaven or to hell, and to no one more. Salvation, according to Swedenborg, is not salvation from punishment, but salvation from sinfulness. They who coöperate with the Lord, and confirm in themselves a principle of good, in the other life become angels, and associate with angels; and their association constitutes heaven. They who resist the divine grace, and confirm in themselves a principle of self-love, which is the root of all evil, become devils; and their association constitutes hell. Both in heaven and in hell there are many societies, each influenced by some ruling principle of good or of evil, like seeking like, both in general and in particular. None go into the other life entirely good or evil: while here, the good and evil are permitted to endure the conflicts of opposing influences within them, that the good may thereby be made better, and the evil good; but after death, when no further radical change can take place, the ruling principle of every one is made manifest, and the whole character conformed to it. This final change is accomplished by degrees; and while it is going on, deceased men are neither angels nor devils, but are spoken of by Swedenborg as not in heaven nor hell, but in "the world of spirits;" and, in the writings of Swedenborg, spirits are thus distinguished from angels and devils. With regard to the resurrection, Swedenborg teaches that it is not a resurrection of the natural body, but of the spiritual body from the natural; and that this occurs generally about the third day after apparent death, when the flesh becomes rigid, and all vital warmth and motion cease. According to him, the spiritual body forms the natural body, and, while within it, uses it as an instrument. Thus the natural eye sees only because the spiritual eye sees natural things through it, the sense strictly residing in the spiritual organ; and so of the other senses. Hence, when the spiritual body rises, it finds itself in perfect possession of the senses and organs, and the man is still perfectly a man. So the spiritual world forms the natural world, and all things which exist naturally in this natural world are spiritually in the spiritual world. There, spiritual things affect the spiritual organs and senses of men, as natural things affect their natural organs and senses here. Hence, says Swedenborg, many who die do not know, upon their awaking, that they are in another world. They who, in this life, have their spiritual senses opened, as Swedenborg says was the case with himself, see plainly spiritual persons and things, as did the prophets in their visions. From this circumstance, say the Swedenborgians, connected with their belief in the active and constant influence of disembodied spirits upon men in the body, has arisen the common notion of their believing in a perpetual intercourse between the living and the dead. Spiritual things have not, however, a similar permanence and independent existence with natural things. Swedenborg rather represents them as appearances changing with the states of those about whom they are—existing from their relation to them, and exactly reflecting and manifesting their affections and thoughts. From the principle that natural things correspond to spiritual things, and represent them, comes the doctrine of correspondences, according to which Swedenborg explains the spiritual senses of the Word; that is, the senses in which the Bible is read by those in the spiritual world. He teaches that this spiritual sense is within the literal, as the spiritual body within the natural, or as the soul within the body; that it is in every word and letter of the literal sense, which every where exists from it, and on account of it, and derives from it all its power and use. Swedenborg considers the New Jerusalem, foretold in the Apocalypse, to be a church now about to be established, in which will be known the true nature of God and of man, of the Word, of heaven and of hell—concerning all which subjects error and ignorance now prevail—and in which church this knowledge will bear its proper fruits—love to the Lord and to one's neighbor, and purity of life.

Swedish Turnip, or Ruta Baga. (See *Turnip.*)

Sweet Bay. (See *Laurel.*)

Sweet Flag (*acorus calamus*). This plant is widely diffused; it is found in marshy places throughout the northern hemisphere. In the more northern climates, it is the only native aromatic plant. The leaves are all radical, long and narrow, sword-shaped, and somewhat resemble those of the iris; the stem does not differ much in appearance from the leaves, and bears a lateral, dense, greenish spike of flowers, two or three inches in length; the root is long, cylindrical, and knotted. This plant is referred to the natural family *aroideæ*, although it presents some anomalies in its structure. The root has a strong, aromatic odor, and a warm, pungent, bitterish taste: the flavor is greatly improved by drying. It has been employed in medicine since the time of Hippocrates; it has sometimes been successfully administered in intermittent fever, even after bark has failed, and certainly is a very useful addition to cinchona; powdered, and infused in old wine, it is an excellent stomachic, tonic, and cordial. Although so common, what is used by druggists is imported from the Levant. No cattle whatever eat this plant.

Sweet Gum. (See *Liquidambar.*)

Sweet Leaf (*symplocos tinctoria*); a small tree, found in the southern parts of the U. States. The leaves are three or four inches long, oval, smooth and shining, and, in sheltered situations, remain for two or three years; otherwise they turn yellow at the first frost: the flowers are small, yellowish, and sweet-scented, springing from the base of the leaves, and appearing early in the season: they are succeeded by small cylindrical drupes, of a deep blue color when ripe. The tree sometimes attains the height of twenty-five or thirty feet, with a trunk seven or eight inches in diameter; but usually it does not exceed half these dimensions. The name which is universally applied to it, is derived from the sugary taste of the leaves. The wood is of no value: but the dried leaves afford, by decoction, a beautiful yellow color, which is rendered permanent by the addition of a little alum, and is used for dyeing wool and cotton.

Sweet Potato (*convolvulus batàtas*). This plant is a native of the East Indies, but is now cultivated in all the warmer parts of the globe, and has produced numerous varieties. Formerly the roots were imported into England from the West Indies by the way of Spain, and sold as a delicacy. It is the potato of Shakspeare and contemporary writers, the common potato being then scarcely known in Europe. The roots are fleshy and spindle-shaped, giving rise to herbaceous vines, which take root at intervals; the leaves are smooth, varying in form, but usually hastate, or three lobed; the flowers are white externally, and purplish within, disposed in clusters upon axillary foot-stalks. In warm climates, the culture is very easy, and they are obtained almost throughout the year, by planting at different periods. In northern climates, the culture becomes more difficult; but one variety succeeds even in the vicinity of Paris. Considered as an aliment, the sweet potato is very nutritious, wholesome, and easy of digestion. The consumption is very considerable, especially in the warmer parts of America, where even several savage tribes have introduced it, on account of its easy culture. In the U. States, it is very little cultivated north of New Jersey, and even there is inferior in quality to those which grow in Carolina.

Sweet William (*dianthus barbatus*). This species of pink is an old inhabitant of the flower garden, and has produced numerous varieties; but they have not been named or improved, as the plant has never been treated by florists as a leading flower.

Sweyn, or **Sweno**, properly **Svend**. (See *Denmark*, and *Ethelred II.*)

Swieten, Gerard van, a celebrated physician, born at Leyden, in 1700. After studying at Louvain, his parents being Catholics, he returned to Leyden, and became the pupil of Boerhaave. In 1725, he took his doctor's degree, and published an inaugural thesis On the Structure and Use of the Arteries. He afterwards employed himself in illustrating the doctrines of his master, in his *Commentaria in Boerhaavii Aphorismis de cognoscendis et curandis Morbis* (1741—1772). Soon after, he was appointed to a medical professorship at Leyden; but objections arising on the score of his religion, he was obliged to resign his office. The empress Maria Theresa indemnified him for the injury he had sustained from the illiberality of his enemies, by inviting him to Vienna, where, in 1745, he was made a professor in the university, and afterwards first physician to the empress, and a baron of the empire. He was also imperial librarian, and director-general of the study of medicine in Austria—an office which afforded him opportunities for introducing many important improvements in the healing art. His Commentaries were reprinted at Paris and Turin, and they have been translated into French and English. He enjoyed the highest reputation till his death, in 1772. His other works are, Treatises on the Diseases of the Army, and on Epidemics.

Swift, Jonathan, an eminent English writer, was the posthumous son of an Englishman, who settled in Ireland, and was born at Cashel, in the county of Tipperary, November 30, 1667. He was placed at a school in Kilkenny when six years old, and in his fifteenth year was removed to Trinity college, Dublin, where, applying himself to history and poetry, to the neglect of academical pursuits, especially mathematics, he was, at the end of four years, refused the degree of B. A. for insufficiency, and, even at the end of seven years, was only admitted *speciali gratiâ*—a species of favor which was deemed highly discreditable. To this mortification is attributed the contempt with which he treats mathematical learning in his various writings; but another and a better effect of it was evinced in a resolution to apply to his studies with more diligence. This determination he steadily adhered to for the following seven years, three of which he spent at the university of Dublin, during which last mentioned period he is said to have composed his celebrated Tale of a Tub In his twenty-first year, the death of his uncle rendered it necessary for him to pay a visit to Leicester, for the purpose of consulting his mother, then resident in that neighborhood. By her advice he was induced to communicate his situation to sir William Temple, who had married one of her relatives, and who at that time lived in retirement at Moor park, Surrey. He was received by the latter with great kindness; and he rendered himself so acceptable to the aged statesman, that he resided with him at Moor park and Sheene for nearly two years. At the latter place he was introduced to king William, who often visited Temple privately; and the king, whose feelings were all military, offered him a captaincy of horse, which, having already decided for the church, he declined. Being attacked by the disorder which occasioned those fits of vertigo that afflicted him more or less all his life, and finally destroyed his reason, he was induced to revisit Ireland, but soon returned, and resided with sir William Temple as before. Some time after, he determined upon graduating M. A. at Oxford; and, having entered at Hart hall, in May, 1692, he received the desired honor in the July following. He was probably indebted to his known connexion with Temple for this mark of respect; but it has also been suspected that the words *speciali gratiâ*, in his Dublin testimonials, were mistaken for a compliment at Oxford. He had certainly not distinguished himself at this time by any public specimen of talent, although he made some attempts at poetry in the form of odes to his patron and king William. This species of composition being wholly unfitted to his genius, his relation Dryden is said honestly to have told him that he would never be a poet; to which is attributed the extraordinary rancor with which he always alluded to that eminent writer. After residing two years longer with his patron, conceiving the latter to be neglectful of his interest, he parted from him, in 1694, with some tokens of displeasure, and went to Ireland, where he took orders. But he soon returned to sir William Temple, who, sinking under age and infirmities, required his company more than ever. During the few remaining years of that statesman's life, they therefore remained together; and, on his death, Swift found himself benefited by a pecuniary legacy and the bequest of his papers. He then accepted an invitation from the earl of

Berkeley, one of the lords justices in Ireland, to accompany him as chaplain and secretary. While in the family of the earl of Berkeley, he began to make himself known by his talent for humorous verses, as may be seen by the petition of Frances Harris, and other specimens. On the return of that nobleman to England, he went to reside at his living of Laracor; and, during his residence there, he invited to Ireland Miss Johnson, the lady whom he has rendered celebrated by the name of Stella, daughter of the steward to sir William Temple. She was accompanied by Mrs. Dingley; and the two ladies resided in the neighborhood when Swift was at home, and at the parsonage house during his absence: this connexion lasted till her death. In 1701, he took his doctor's degree, and, the same year, first entered on the stage as a political writer, by a pamphlet in behalf of the ministers, entitled, Contests and Dissensions between the Nobles and Commons of Athens and Rome—a work of no great force. In 1704, he published, anonymously, his famous Tale of a Tub, of which, although he would never own it, he is the undoubted author. This piece of humor, while it advanced his reputation as a wit, did him no small injury as a divine, being deemed light and indecorous, by the functionaries of the church. The Battle of the Books, appended to the Tale of a Tub, is a burlesque comparison between ancient and modern authors, in which he exercises his satire against Dryden and Bentley. In 1708 appeared his Sentiments of a Church of England Man, in respect to Religion and Government; Letter concerning the Sacramental Test; Argument for the Abolition of Christianity; and Predictions for the year 1708, by Isaac Bickerstaff, Esq. Of these pieces, the first two set the seal to his adhesion to the tories, while the others exhibit that inimitable talent for irony and grave humor which forms his principal distinction. In 1710, being engaged by the Irish prelacy to obtain a remission of the first-fruits and twentieths, payable by the Irish clergy to the crown, he was introduced to Harley, afterwards earl of Oxford, and to secretary St. John, subsequently lord Bolingbroke. He gained the confidence of these leaders, and took a leading share in the famous tory periodical, entitled the Examiner. Although immersed in politics, he did not neglect literature, and, in 1711, published a Proposal for correcting, improving and ascertaining the English Tongue, in a letter to the earl of Oxford, the object of which was to establish an institution to secure the purity of the language. Several political tracts appeared about this time from his pen. A bishopric in England was the object of his ambition; but archbishop Sharpe, on the ground, it is said, of his Tale of a Tub, having infused into the mind of queen Anne suspicions of his orthodoxy, the only preferment his ministerial friends could give him, was the Irish deanery of St. Patrick's, to which he was presented in 1713. The dissensions between Oxford and Bolingbroke, whom he in vain attempted to reconcile, and the death of the queen, which soon followed, put an end to his prospects, and condemned him to unwilling residence for life in a country which he disliked. He accordingly returned to Dublin, and introduced a meritorious reform into the chapter of St. Patrick's, over which he obtained an authority never before possessed in his station. In 1716, he was privately married to Miss Johnson; but the ceremony was attended with no acknowledgment which could gratify the feelings of the victim of his pride and cruelty. The ascendency which he acquired over Miss Hester Vanhomrigh, another accomplished female, was attended with circumstances still more censurable. He became acquainted with this lady in London, in 1712; and as she possessed, with a large fortune, a taste for literature, Swift took pleasure in affording her instruction. The pupil became enamored of her tutor, and even proposed marriage to him; but being probably at that time engaged to Stella, he avoided a decisive answer. That he, however, felt her attractions, seems obvious from his Cadenus and Vanessa, the longest and most finished of his poems of fancy. This affair terminated fatally; for, discovering his secret union with Stella, the unfortunate lady never recovered the shock, but died fourteen months after, in 1723. She previously cancelled a will she had made in his favor, and left it in charge to her executors (one of whom was bishop Berkeley) to publish all the correspondence between her and Swift, which, however, never appeared. After residing some time in Ireland without attending to public affairs, in 1720 he was roused, by the illiberal manner in which Ireland was governed, to publish a Proposal for the universal Use of Irish Manufactures, which rendered him very popular. His celebrated Letters followed, under the name of M. B. Drapier, in which he ably exposed the job of Wood's patent for a supply of copper coinage. A large reward was offered for the discovery of the author; but none took place, and the dean became the public idol of the Irish people. It was about this time that he composed his famous Gulliver's Travels, which appeared in 1726, exhibiting a singular union of misanthropy, satire, irony, ingenuity, and humor. In the same year he joined Pope in three volumes of miscellanies, leaving the profit to the poet. On the death of George I, he paid his court to the new king and queen. But he was disappointed; and the death of Stella, about this time, who had been long languishing in a state of decline, completed his chagrin. When her health was ruined, he offered to acknowledge her as his wife; but she replied, "It is too late." He allowed her to make a will in her maiden name, in which she consigned her property to charitable uses. From the death of this injured female, his life became much retired, and the austerity of his temper increased. He continued, however, for some years, to exercise both his patriotic and his splenetic feelings, in various effusions of prose and verse, and was earnest in his exertions to better the condition of the wretched poor of Ireland; in addition to which endeavors he dedicated a third of his income to charity. Some of his most striking poems were written about this time, including his celebrated Verses on his own Death, formed on one of the maxims of Rochefoucault. He kept little company at this advanced period, but with inferiors, whom he could treat as he pleased, and especially a knot of females, who were always ready to administer the most obsequious flattery. In 1736, he had an attack of deafness and giddiness. The fate, which, owing to his constitutional infirmities, he had always feared, at length reached him; the faculties of his mind decayed before his body, and a gradual decay of reason settled into absolute idiocy early in 1742. He died in 1745, in his seventy-eighth year. He bequeathed the greatest part of his fortune to an hospital for lunatics and idiots. Pride, misanthropy, and stern inflexibility of temper, formed the basis of his character, which was strangely compounded of sincerity, arrogance, implacability, carelessness of giving pain, and a total want of candor as a politician or partisan. Of his obdurate and unfeeling nature, besides his treatment of his wife and Miss Vanhomrigh (for which various reasons, including secret constitutional infirmities, have been conjectured), his utter abandonment of an only sister, simply for marrying a tradesman, and many other instances, might be adduced. Even his whim and humor was indulged with a most callous indifference to the pain which he might inflict, or the sensibilities he might wound. As a writer, he was original, and has, perhaps, never been exceeded in grave irony, which he veils with an air of serious simplicity, admirably calculated to set it off. He also abounds in ludicrous ideas, which often deviate, both in his poetry and prose, into very unpardonable grossness. His style forms the most perfect example of easy familiarity that the language affords; but, although admirable for its pureness, clearness, and simplicity, it exhibits none of the glow of genius, its highest merits consisting in its extreme accuracy and precision. His works have been often printed, and in various forms: the latest and best edition is that of sir W. Scott, in 19 vols., 8vo. (Edinburgh, 1821).

Swift, Zephaniah, LL. D., chief-justice of Connecticut, graduated at Yale college, in 1758. He then studied law, and established himself at Windham, Connecticut. Early in life, he was chosen a member of congress, and, in 1800, accompanied Ellsworth, Davie and Murray in their mission to France, as secretary. Soon after his return, he was placed on the bench of the superior court. He retained the seat for eighteen years, during the last five of which, he filled the station of chief-justice with distinguished ability and probity. He was afterwards a member of the state legislature, and was one of the committee appointed to revise the statute laws of the state. His death occurred at Warren, Ohio, October 27, 1823, in the sixty-fifth year of his age. He published a Digest of the Laws of Connecticut, in two volumes, on the model of Blackstone.

Swimming is one of the most important branches of gymnastics, both in a physical and moral respect. Its effects in developing, invigorating and giving health to the body are so great, and it is so easily learned, that it is of the highest consequence, particularly in climates where the heat of the summer prevents active exercise on the land. To all the advantages of cold bathing, it adds many others; it enables the bather to remain much longer in the water, on account of the exercise which it affords, and thus—in salt water at least—gives more opportunity to invigorate the skin—one of the greatest benefits of frequent salt-water bathing, as a large number of diseases spring from a debilitated state of the skin, which is very frequent in changeable climates, producing colds, inflammations, rheumatism, &c. The exercise greatly strengthens the lower extremities, the abdominal muscles, the muscles of the chest, and the organs of respiration, the spine, neck and arms. It increases courage, and furnishes an agreeable excitement—the usual attendant of manly and brisk exercise, but peculiarly so of swimming—on account of the mastery which it gives us over an element for which the human structure is but partially fitted. The means which it affords of preserving our own lives, or those of others, in situations of peculiar peril, is also a great recommendation of this exercise, which may be easily learned wherever there is water of five feet depth. No danger whatever is connected with it. Of the many methods of teaching swimming, we shall give that introduced, originally, by general Pfuel, into the Prussian swimming schools, having found it, by experience, much superior to other systems. By this method, a person may become a perfect swimmer (able, we mean, to swim at least half an hour in succession) in a very short time. We have known many individuals, who could not swim a single stroke, enabled, by taking daily one, and sometimes two lessons, for three weeks, to swim half an hour: some have even acquired this proficiency within a fortnight. The apparatus for teaching consists of a hempen girdle of a hand's breadth, of a rope from five to six fathoms in length, of a pole eight feet long, and a horizontal rail fixed about three and a half feet above the platform on which the teacher stands, to rest the pole on. The depth of the water, in the place chosen for swimming, should, if possible, be not less than eight feet, and the clearest and calmest water possible should be selected. The pupil wears drawers, fastened by a string above the hips, and covering about half the thighs. They must be made loose, so as to allow the freest action of the legs. The pupil is now placed near the horizontal rail, his hands resting upon it, whilst the teacher shows him the motion which he will have to make with his legs in the water. This he does by guiding the motion of one leg, while the pupil rests on the other. This motion will be explained immediately. The swimming girdle, about five inches wide, is placed round the pupil's breast, so that its upper edge touches the paps, without sitting tight. The teacher takes the rope, which is fastened to a ring of the girdle, in his hand, and directs the pupil to leap into the water, keeping the legs straight and close together, and the arms close to the body; and—what is very important—to breathe out through the nose, as soon as his head rises above the water, instead of breathing in first, which every man naturally does after a suspension of breath. The object of this is to prevent the water from getting into the throat, which produces an unpleasant feeling of choking and head-ache. The expiration soon becomes perfectly natural to a swimmer. The pupil is then invited to leap—never pushed. He is drawn up immediately by the rope, pulled to the ladder, and allowed to gain confidence gradually. The rope is now fastened by a noose to the end of the pole, the end of it being kept in the hand of the teacher; the pole is rested on the horizontal rail, and the pupil stretches himself horizontally in the water, where he remains supported by the pole. The arms are extended stiffly forward, the hands clasped; the chin touches the water; the legs are also stiffly stretched out, the heels being together, the feet turned out, the toes drawn up. This horizontal position is important, and must be executed correctly. No limb is permitted to be relaxed. The motion of the legs is taught first: it is divided into three parts. The teacher first says, loudly and slowly, "One;" when the legs are slowly drawn under the body, and, at the same time, the knees are separated to the greatest possible distance; the spine is bent downwards, and the toe kept outwards. The teacher then says, briskly, "Two;" upon which the legs are stiffly stretched out with a moderate degree of quickness, while the heels are separated, and the legs describe the widest possible angle, the toes being contracted and kept outwards. The teacher then says, quickly, "Three;" upon which the legs, with the knees held stiffly, are quickly brought together; and thus the original position is again obtained. The point at which the motions two and three join, is the most important, because it is the object to receive as large and compact a wedge of water between the legs as possible, so that, when the legs are brought together, their action upon this wedge may urge the body forward. In ordinary easy swimming, the hands are not used to propel, but merely to assist in keeping on the surface. By degrees, therefore, two and three are counted in quick succession, and the pupil is taught to extend the legs as widely as possible. After some time, what was done under the heads two and three, is done when two is called out. When the teacher sees that the pupil is able to propel himself considerably, which he frequently acquires the power of doing in the first lesson, and that he performs the motions already mentioned with regularity, he teaches the motion of the hands, which must not be allowed to sink, as they are much disposed to do, while the motion of the legs is practised. The motion of the hands consists of two parts: when the teacher says "One," the hands, which were held with the palms together, are opened, laid horizontally an inch or two under the water, and the arms are extended, until they form an angle of 90°; then the elbow is bent, and the hands are brought up to the chin, having described an arch downward and upward; the lower part of the thumb touches the chin, the palms being together. When the teacher says "Two," the arms are quickly stretched forward, and thus the original horizontal position is regained. The legs remain stiffly extended during the motion of the hands. If the motion of the hands is correctly performed, the legs and arms are moved together; so that, while the teacher says "One," the pupil performs the first motion of the hands and legs; when he says "Two," the second and third motions of the feet, and the second of the hands. As soon as the teacher perceives that the pupil begins to support himself, he slackens the rope a little, and instantly straightens it, if the pupil is about to sink. When the pupil can swim about ten strokes in succession, he is released from the pole, but not from the rope. When he can swim about fifty strokes, he is released from the rope too; but the teacher remains near him with a long pole, until he can swim 150 strokes in succession, so that, should he sink, the pole is immediately held out to him. After this, he may swim in the area of the school under the superintendence of the teacher, until he proves that he can swim half an hour in succession, when he is considered fit to be left to himself, and, in some swimming schools, receives a particular mark on the drawers, that the proficient may be distinguished from the unskilful. Before this degree of progress is reached, pupils are not allowed to take part in long excursions. Swimming on the back is easily taught. The swimmer places his hands over his hips, the thumbs turned towards the back, and, letting himself sink perpendicularly in the water, bends his head backward, and makes the common motion with the feet, when he will swim on the back; or, after having made a stroke when swimming on his belly, he may leave one arm extended, and turn the palm of the hand upward; in which case the whole body will follow, and the swimmer thus be placed on his back. To expedite the motion in swimming on the back, the arms may be used as paddles. To swim quickly on the belly, the hands are turned with the palms outward, so as to press sideways against the water, instead of being allowed to rest flat on it. This makes the efforts of swimming greater, and, of course, exhausts sooner. The teacher may early begin to let the pupil make running leaps into the water. In many cases, the pupils have sufficient confidence to leap from a considerable height the very first time. Every swimming school ought to have a leaping tower, from which the swimmers may leap at different heights. The tower should not be less than thirty feet high. Diving is one of the greatest amusements connected with swimming. There are many kinds: the two most common, easiest and necessary modes of plunging below the surface, are, 1. by a simple jump, feet foremost, the legs, arms and head being kept stiff. The pupil must not allow fear, or the strange sensation felt in the abdominal region, in leaping from considerable heights, to induce him to spread the arms or legs, or to bend his body. 2. The other mode is to plunge head foremost, which is the safest mode for many persons who are heavily built about the chest and shoulders, if they have to enter the water from great heights. It must be learned by degrees. The head is drawn down upon the chest, the arms stretched forward, and, as soon as the swimmer begins to feel that he has lost his balance, he stiffens his knees, which, till then, were bent. The diver must avoid striking on his belly—the general consequence of fear—and turning over so as to come down on his back or side—the consequence of pushing with the feet. When he has gone as deep as he wishes, the arms are to be raised, and pressed downwards. In saving a person from drowning, which can be done most effectually if he has already lost consciousness, pull him by the hair, or push him before you, if far from shore; otherwise take him by the arm. If the person in danger is an exhausted swimmer, call to him to be quiet; support him by one shoulder; or, if he still retains his presence of mind, let both his hands rest on your shoulder, or under your arm-pits, and let him work slowly with his legs. If the person in danger is not a swimmer, and is struggling, take care not to approach him in front; his convulsive grasp may be fatal to both; but approach him from behind, and, if he sinks, pull him up by the hair, and support him with the utmost caution. If he grasps you, so that you are unable to move, struggle with him under the water. The drowning person, in this situation, will often let go his hold, striving instinctively to reach the surface; but, if the struggle becomes one for life, the only mode of making your antagonist relax his hold is said to be to grasp his throat and render him senseless, as we have known done in a case where a person was thus seized, and both parties were floating swiftly towards the wheels of a mill.—Swimming may be begun very early, at five or six years of age; and, at the same time, there are many instances of persons past forty learning to swim well. It is unfortunate that prejudice has excluded females from an exercise so healthful to body and mind, so useful in times of danger, and so easily acquired, particularly as they would learn it more easily than males, and as the exercise of swimming would be peculiarly useful to certain functions peculiar to females. A covered place, female teachers, and a loose dress from the neck to the ankles, would satisfy all the claims of propriety. It is time that a beginning should be made.—The human body, with air in the lungs, is a little lighter than fresh and considerably lighter than salt water; hence it does not sink entirely in water; but the entrances to the organs of respiration are so placed that they would be under water in a body floating naturally. With a little management, however, and perfect confidence (which, it is true, can only be expected from a swimmer), any person can float on his back, especially in salt water. Animals, in swimming, do not vary much from their motion in walking; but man is obliged to change his motion entirely. All the Sclavonic tribes—Russians, Poles, &c.—swim in a way somewhat resembling the motion of dogs in the water, making a separate effort with each of the four extremities. Every teacher should remember that swimming is half learned when the pupil has gained confidence; and it is generally very easy to inspire it. The best treatise on swimming with which we are acquainted, is a thin pamphlet, published by general von Pfuel, in Berlin, 1817. There are now swimming schools in Paris, Vienna, Münich, Berlin, Breslau, and many other places in Europe. In the U. States, we know of none, as yet, except in Boston.

Swinden, John Henry van, a Dutch philosopher, born at the Hague, in 1746, was educated at Leyden, and became professor of philosophy, logic and metaphysics at Franeker, in 1767. Nineteen years after, he was called to the chair of physics, mathematics and astronomy at the Athenæum at Amsterdam. In 1770, he became a member of the academy of sciences at Paris; and he gained the prize offered by that learned body for the best memoir *Sur les Aiguilles aimantées et leurs Variations*, and, in 1780, obtained a prize from the academy of Münich, for a memoir in answer to the question, "What analogy is there between electricity and magnetism?" which was afterwards printed (2 vols., 8vo.). In 1798, he appeared at Paris, at the national institute, to assist in the establishment of a new system of weights and measures, when he was appointed to draw up the reports on those subjects. In 1803, he was nominated a correspondent of the French institute; and he belonged to the principal learned societies in Europe. He also occupied the office of member of the executive directory, under the Batavian republic, and that of counsellor of state in the service of the king of the Netherlands. He died March 9, 1823. Van Swinden was the author of several works besides those already mentioned, of which notices may be found in the annexed authorities. *Biog. Nouv. des Contemp. Biog. Univ.*

Swine. (See *Swinemünde.*)

Swinemünde (that is, *mouth of the river Swine*); a town in Pomerania, on the isle of Usedom, on the Swine, one of the branches by which the Oder empties into the Baltic. It is the harbor of Stettin. (q. v.) Long and expensive moles have lately been built, to render the harbor safe, and prevent the river from being choked with sand. The beacon is in lat. 53° 15′ N., and lon. 14° 15′ 15″ E. Depth of water from Swinemünde to Stettin, twelve Prussian feet; inhabitants, 3800.

Switzerland (German, *Schweitz*; French, *Suisse*); the Swiss or Helvetic confederacy. The northern and southern nations of Europe have been singularly intermingled in the ancient Helvetia, whose Alpine walls seem like a barrier, separating them from each other. The

Roman legions, indeed, conquered the Gauls, Rhætians and Alemanni in their forests and marshes; but they could not destroy the northern spirit of freedom. The traces of its ancient subjugation to Rome are still visible, in the Romanic language of a part of Switzerland. Helvetia (q. v.), under the Romans, had a flourishing trade, which covered the land with cities and villages; and Switzerland still forms the connecting link between Northern Germany, the Netherlands and France on the one side, and Italy on the other. Before the fall of the Roman empire in the West, the northern and largest part of Switzerland, occupied by the Alemanni, had been conquered by the Franks. (See *Clovis.*) On the Jura dwelt the Burgundians, and Rhætia was under the Ostrogoths. Three German nations, therefore, freed the country, about A. D. 450, from the dominion of Rome. Christianity had already been introduced into Helvetia from Italy, and as early as the fourth century there were Christian churches at Geneva, Coire, and other places. The Alemanni and Burgundians gave their laws and their habits to the Helvetians; and the Alemanni occupied the greater part of the country. Each soldier received a farm; a judge, or centgrave, was set over one hundred of these farms (forming a cent, or hundred); and the place of judgment, where he settled all questions between the free citizens, was called *Mallus*. Several cents formed a *Gau* (hence Thurgau, Aargau, &c.), the judge of which was styled *count* (*graf*); and the counts were under a duke. The great irruption of barbarians swept through the peaceful valleys of the Alps, and Roman civilization disappeared. Ostrogoths, Lombards, and even Huns, settled in different parts of the country. At last, the Franks, who had taken possession of the lands of the conquered Alemanni, drove the Ostrogoths over the Rhætian mountains. In 534, they likewise subjected the Burgundians, and all Switzerland became a portion of the Frankish empire. The country, however, retained its ancient constitution; the Romans and the old inhabitants were governed by Roman, the Alemanni by Alemannic, laws; and each of the other nations by its peculiar code. The Christian religion was restored anew, and the desolated fields were again brought under cultivation. On the partition of the empire of the Franks among the Merovingians, Switzerland was divided between two sovereigns: one reigned over Alemannian, and the other over Burgundian Switzerland, or Little Burgundy. (See *France.*) Pepin re-united the whole country, and Charlemagne encouraged the arts and sciences in Helvetia. Under his feeble successors, the counts became more and more independent of the royal authority, and finally made the possession of their *Gaus* hereditary. One of them (Rodolph) established (888) the new kingdom of Burgundy, between the Reuss and the Jura. Nine years previously, Boso had established the kingdom of Arles, in the territory between the Jura and the Rhone. Thirty years afterwards, the two Burgundian kingdoms were united. (See *Burgundians.*) The counts in the other parts of Switzerland were still nominally subject to the German kings; but they conducted themselves as princes, assumed the name of their castles, and compelled the free inhabitants of their *Gaus* to acknowledge them as their lords. Hence arose a multitude of independent and complicated governments, whose chiefs were engaged in continual feuds with each other. War was the business of the nobles, and misery the fate of the people in the distracted land. The emperor Conrad, therefore, set a duke over the counts in Alemannia in 911. But the emperors of the Saxon house (919—1024) were the first who compelled the dukes, counts and bishops, in Switzerland, to respect their authority. After the death of Rodolph III, the fifth and last king of Burgundy (1032), the emperor Conrad II re-united Burgundian Switzerland with Alemannic, which belonged to the German empire. But under Henry IV, grandson of Conrad II, the royal authority in Switzerland was again overthrown. Henry (see *Henry IV* of Germany), persecuted by the pope, sought adherents. He gave to the duke of Zähringen the Alemannic part of Switzerland, to which, in 1125, after the conquest of the count of Hochburg and of Raynold of Chalons, Conrad of Zähringen added the Burgundian portion. The dukes of Zähringen humbled the proud and quarrelsome nobility, but favored Zürich and the other imperial cities; and built several new cities, among which were Friburg, in Uchtland, in 1178, and Berne in 1191. The country people became more secure; the feuds among the nobility less frequent; manufactures and industry flourished; Geneva and Lausanne, among the Romanic, and Zürich and Basle among the German cities, became thriving towns. The families of Savov, Kyburg and Haosburg were the most powerful among the noble families. Many nobles went, about this time, to Palestine; and thus the country was delivered from their oppression. After the death of Berthold V, last duke of Zähringen, in 1218, Alemannia again came into the possession of the emperors. His hereditary estates in Uchtland and in Little Burgundy passed, by his sister Agnes, to the house of Kyburg. From this time, the Hapsburgs (q. v.) in northern Helvetia, and the counts of Savoy (q. v.), in the south-west, grew more and more powerful. The emperor appointed some nobleman as governor of each city, or community, which was not under a count, to collect the public revenue and to punish violations of the public peace; still, however, private feuds continued. The German kings were no longer able to afford protection; might gave right, and the boldest became the mightiest. Several inferior lords, and several places, therefore, sought the protection of Hapsburg or Savoy. Zürich, Berne, Basle and Soleure, the districts of Uri, Schweitz and Underwalden, gradually acquired the seigneurial rights from the emperors, by purchase or by grant, and assumed the name of imperial cities or imperial districts. They were more prosperous and powerful than the nobility, who lived in their solitary castles, at enmity with each other. Even the crusades, by promoting commerce, improved the already flourishing condition of the cities, as a part of the troops, arms, provisions, &c., were transmitted to Italy, through the passes of the Alps. The crusaders brought back new inventions in the arts, new kinds of fruits, &c. The gold and silk manufactures of the Italians and Eastern nations were imitated in Switzerland; refinement took the place of rudeness, and poetry became the favorite amusement of the nobles. The cities now formed alliances for their mutual protection against the rapacity of the nobles, and demolished many castles, from which they exercised their oppression upon the peaceful merchants. At the end of the thirteenth century, Rodolph of Hapsburg (q. v.), who, in 1264, had inherited the estates of his uncle, Hartmann, count of Kyburg, became more powerful than the old lords of the soil. As king and emperor of Germany (1273), he held a court in Helvetia; but he did not abuse his power to reduce the freemen to vassalage. His ambitious sons, however, Rodolph and Albert, encroached upon the rights of the Swiss. Albert, in particular, who succeeded to the imperial dignity in 1298, by his tyranny and obstinacy, gave rise to the first confederacy of the Swiss cantons. (See *Tell.*) On the night of November 7, 1307, thirty-three brave countrymen met at Rütli (Grutlin), a solitary spot on the lake of Lucerne. (q. v.) Fürst of Uri, Stauffacher of Schweitz, and Melchthal (q. v.) of Underwalden, were the leaders on this occasion. All swore to maintain their ancient independence. The three Waldstädte, or Forest-Towns (as these cantons were called), rose, therefore, January 1, 1308, deposed the Austrian governors, and destroyed the castles built to overawe the country. (See *Albert I.*) Henry VII, the successor of Albert on the German throne, confirmed to the Forest-Towns the rights of which Albert had endeavored to rob them. But the house of Austria still contended obstinately for its lost privileges. The victory of Morgarten (q. v.), gained by the Forest-Towns (1315) over Leopold of Austria, gave rise to the perpetual league of Brunnen, on December 9 of the same year, to which, previous to 1353, Lucerne, Zürich, Glarus, Zug and Berne had acceded. The victories of Sempach (July 9, 1386), where Arnold Winkelried sacrificed his life, and of Näfels (April 9, 1389), gave them an uncertain peace. But the warlike spirit of the people fostered a love of conquest and plunder; mutual hatred kindled civil wars between neighboring cantons; foreign powers sought the aid of the confederates in their contests. In 1424, the people of the Grey League established their independence, and were soon after joined by those of the other two leagues. (See *Grisons.*) The emperor Frederic III then called a French army into Switzerland to protect his family estates. The Swiss made a second Thermopylæ of the church-yard of St. Jacob at Basle, where 1600 of them withstood 20,000 French under the dauphin Louis, August 26, 1444. They next provoked Charles the Bold of Burgundy (q. v.), who marched into their country, but was defeated at Granson, Murten, or Morat (q. v.), and Nancy (1477). The confederates themselves aspired to conquest, the people being fired by the desire of plunder, and the nobles by ambition of glory. In 1460, they wrested Thurgau from Austria; and from 1436 to 1450, Zürich, Schweitz and Glarus contended for Toggenburg, till Berne decided the dispute in favor of Schweitz. The confederated cantons from this time bore the name of the Swiss confederacy in foreign countries. In 1481, Friburg and Soleure entered the confederacy. The emperor Maximilian I now determined to force the Swiss to join the Suabian league, and to submit to the court of the imperial chamber. But they suspected Germany on account of Austria, and joined the Grisons. Hence arose the Suabian war, which was concluded, after the Swiss had gained six victories over the Germans, by the peace of Basle, in 1499. Basle and Schaffhausen (1501), and Appenzell (1513), were afterwards admitted into the confederacy. But the country and people were disturbed by domestic and foreign wars. In the Milanese war of 1512, the Swiss conquered the Valteline and Chiavenna, and obtained from Milan the Italian bailliages, which form at present the canton of Tessin. They fought on a foreign soil, now for, now against, Milan; at one time for France, and at another time against her, till after the great battle of Marignano, gained by Francis I, in 1515, they concluded a perpetual peace with France, at Friburg, in 1516, which was followed, in 1521, by the first formal alliance with that kingdom.* About this time the work of reformation began in Switzerland. Zuinglius (q. v.), in 1518, preached against indulgences, as Luther had done in 1517. Even as early as 1516, he had attacked pilgrimages, and the invocation of the virgin Mary; and in 1517, with the knowledge of his patron, the abbot of Einsiedeln, several nuns abandoned the monastic life. His removal from Einsiedeln to Zürich, in 1518, gave him courage to speak more openly, as Luther had, meanwhile, appeared in the cause of reform. But when the principles of the reformation were diffused through Zürich, Berne, Schaffhausen, Basle (by the labors of Œcolampadius), St. Gall, Mühlhausen and Bienne, religious jealousy separated the reformed and the Catholic cantons. (See *Reformed Church.*) In Glarus, Appenzell and the Grisons, the people were divided between the two confessions. Luzerne, Uri, Schweitz, Underwalden, Zug, Friburg and Soleure adhered to the ancient faith; as did likewise the Valais and the Italian bailiwicks. Fanaticism kindled a civil war. The Schweitzers burnt a Protestant preacher of Zürich. Two Swiss armies, nearly 30,000 strong, awaited the signal for civil war, when the word *concord* was pronounced, and the first religious peace was concluded in 1529. It was agreed that the majority of votes in the communities should decide all questions relating to changes of faith. But the rapid progress of the reformation again provoked the Catholic cantons to war; and the troops of Zürich were routed at Cappel (1531), where Zuinglius fell, and at the mountain of Zug. After the second public peace, the Catholic religion was restored in Soleure and the common provinces. In the mean time, Savoy, which had long possessed episcopal and seignieurial rights in Geneva, reduced the city to entire submission. But the oppressive manner in which the ducal authority was exercised, led Geneva (q v.), in 1525, to join Berne and Friburg. The duke was forced to yield. Berne and Geneva concluded the perpetual league of 1531, and Berne gained possession of the Pays de Vaud. (q. v.) At the same time, the reformed doctrines were propagated from Geneva by Calvin. (q. v.) By the peace of Lausanne, in 1564, Savoy first renounced her claims upon the Pays de Vaud, and was thus driven from Helvetia, as Hapsburg had been before. About this time (1555), Berne and Friburg divided between themselves the territories of the counts of Gruyere, so that, in all Helvetia, no great family of the ancient nobles retained its patrimonial estates, except that of Neuburg. The Swiss, however, were distracted by religious and political controversies. Aristocracy and democracy struggled for the superiority, and the intrigues of Spain filled the people of the Valteline (1617—21) with a spirit of fanaticism. In foreign, and especially in the French service, the Swiss adopted foreign manners: he sold his blood to foreign masters; and the ancient Swiss purity and simplicity retired to the remote valleys of the higher Alps. At the same time, the connexion of the confederacy with the German empire became less and less close, while the cantons obtained the confirmation of their rights from the emperor Maximilian II. But the influence of France soon became predominant, and Rome swayed the minds of its adherents by means of Jesuit colleges at Lucerne and Friburg; and particularly through the papal nuncio at Lucerne (since 1580). In the thirty years' war, the confederates maintained a prudent neutrality; and, by the peace of Westphalia (1648), the complete separation of Switzerland from the German empire was at length solemnly acknowledged. In 1663, France renewed her alliance with the Swiss, and asserted that they had no right to form alliances with other powers. The conquest of the Franche Comté, in 1674, and the siege of Rheinfeld, in 1678, by the French, together with the erection of the fortress of Hüningen (q. v.), in 1679, excited the apprehensions of the Swiss. They, however, happily maintained their neutrality, even in the war of the Spanish succession (1701—14). During the persecution of the Protestants in France (from 1685), to whom they readily gave an asylum and pecuniary aid, they paid as little regard to the remonstrances of Louis, who viewed the reformers as rebels, as he did to the intercession of the Protestant Swiss cantons in favor of their brethren in the faith. The Swiss had little influence in foreign politics during the eighteenth century; and, until towards its close, they suffered little from foreign interference. This tranquillity, which, however, was often interrupted by internal dissensions, was alike favorable to the progress of commerce, agriculture and manufactures, and to the arts and sciences. In almost every department of human knowledge, the Swiss of the eighteenth century, both at home and abroad, acquired distinguished reputation, as the names of Haller, Bonnet, Bernoulli, J. J. Rousseau, Lavater, Bodmer, Breitinger, Gessner, Sulzer, Hirzel, Fuseli, Hottinger, John von Müller, Pestalozzi, and many others, bear witness. The people of the democratic cantons enjoyed an almost unlimited freedom, and took a large share in the affairs of government. Those places which were under the general protection of the whole confederacy, were not burdened by excessive taxes; they enjoyed a high degree of civil freedom, and numerous municipal rights. The larger cantons, as Berne and Zürich, in which the government was administered by the capitals, or by a body of the citizens, who enjoyed many peculiar privileges, were also in a flourishing condition. There were no oppressive taxes; but almost every where the government was conscientiously conducted; the administration of justice was cheap and simple, and benevolent institutions were numerous. Notwithstanding all these favorable circumstances, internal dissensions still continued, and new troubles arose in 1790, which shook the political fabric; blood was often spilt, and punishment rendered necessary. Although the Swiss had at first firmly maintained their neutrality in the wars of the French revolution, French power and intrigue gradually deprived them of their former constitution; and, after incorporating several portions of Switzerland with the French and Cisalpine republics, the French converted the Swiss confederacy into the Helvetic republic, one and indivisible, under an executive directory of five persons. The legislative power was divided between a senate and a great council, to which each of the fourteen cantons elected twelve members. It was in vain that some of the democratic cantons attempted to prevent this revolution. They were speedily overpowered. But the oppressions of the French; the arbitrary manner in which they disposed of the highest offices; the great number of weak and corrupt men who were raised to power,—soon made the new officers contemptible. Aloys Reding, a man of enterprising spirit, whose family was celebrated in the annals of his country, formed the plan of overthrowing the central government. Underwalden, Schweitz, Zürich, Glarus, Appenzell and the Grisons wished to restore the federal constitution; and Reding imagined that Bonaparte himself, who had just withdrawn the French troops from Switzerland, would favor his plan. The smaller cantons, in their diet at Schweitz (August 6, 1802), declared that they would not accept the constitution which had been forced upon them, and that they preferred a federal government. The consequence was a civil war. Zürich was besieged to no purpose by the troops of the Helvetic republic, against whom its gates were shut. Rodolph von Erlach and general Auf der Maur, at the head of the insurgents, occupied Berne and Friburg. The Helvetic government retired to Lausanne. Aloys Reding now summoned a general assembly, which was held at Schweitz, Sept. 27. Three days after, the first consul of France offered to the cantons his mediation; but the small cantons, guided by Aloys Reding and Hirzel of Zürich, persevered in their opposition. Twelve thousand French troops entered Switzerland, under Ney, and the diet separated. Reding and Hirzel were imprisoned. In December, both parties sent deputies of the eighteen cantons to Paris, to whom Bonaparte transmitted, by Barthélémy, Fouché and Röderer, the act of mediation of Feb. 19, 1803, restoring the cantonal system, but granting freedom to the former subjects of the cantons. The cantons were now nineteen in number—Aargau, Appenzell, Basle, Berne, Friburg, Glarus, Grisons, Lucerne, St. Gall, Schaffhausen, Schweitz, Soleure, Tessin,

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* From Louis XI to Louis XV, the Swiss furnished for the French service 1,110,798 men, for which France paid 1,146,868,623 francs. (See *Guards.*)

Thurgau, Underwalden, Uri, Pays de Vaud, Zug, and Zürich. The republic of Valais was changed, by a decree of Napoleon, in 1810, into a French department; and as early as 1806, he granted Neufchatel (which had been ceded to him by Prussia, but which was under the protection of Switzerland) to general Berthier, as a sovereign principality. Napoleon assumed the title of "mediator of Switzerland;" and the military service required of the Swiss became more and more oppressive. It was only by great firmness and the sacrifice of immense sums of money, that most of the cantonal governments could avert greater oppression: they were obliged to adopt the continental system; and the canton of Tessin was long garrisoned by French troops. In 1813, when the theatre of war approached Switzerland, France permitted the Swiss to maintain their neutrality; but the allies expressed themselves ambiguously, and large armies were soon marched through the country in various directions to France. Their arrival excited a fermentation in many quarters. The act of mediation was annulled, Dec. 29, 1813, at Zürich, and several cantons, of which Berne (1814) was the first, labored to revive their old constitutions. Through the influence of the allied monarchs, the cantons were finally prevailed on to assemble a general council; but revolutions and counter-revolutions agitated several of the cantons. Some of them were in arms against each other; others enjoyed a happy tranquillity, and the respect of the foreign powers. All, meanwhile, were engaged in settling their constitutions. The old cantons adhered more or less closely to their former frames of government, and the new cantons endeavored to give to those which they adopted more stability. A diet was at length assembled at Zürich, and new articles of confederation were agreed upon by nineteen cantons, Sept. 18, 1814. They resembled the old federal pact in many respects. This confederacy was acknowledged by the congress of Vienna. The bishopric of Basle, with Bienne, was given to the canton of Berne, excepting the district of Birseck, which fell to Basle, and a small portion, which fell to Neufchatel. The former relations of the latter place to Prussia were restored, and, with Geneva and the Valais, it joined the confederacy of the Swiss cantons, making their number twenty-two. Aug. 7, 1815, the compact of Zürich was publicly and solemnly adopted, after the deputies of the confederacy at Vienna had given in their accession to the acts of the congress of Vienna, so far as they related to Switzerland (74—84, and 91—95). Nov. 20, 1815, the eight powers, Austria, Russia, France, England, Prussia, Spain, Portugal and Sweden, proclaimed, by a separate act, the perpetual neutrality of Switzerland, and the inviolability of its soil. Soon after, Switzerland became a member of the holy alliance. But the political state of the Swiss cantons, as settled by the congress of Vienna, and jealously watched by the holy alliance, gave rise to much disaffection in the great body of the people. Though republics in name, nothing could be less republican than many of their laws and customs: privileges of orders, of corporations, of localities, and of family, interfered with the equal rights of the majority of the citizens. The federal diet was overawed by the holy alliance, and oppressed, in turn, the cantons; the chief towns tyrannised over the country districts, and a few trades or families tyrannised over the towns. Refugees for political offences from the neighboring states were refused an asylum, and the press was shackled by the diet, in opposition to the voice of the nation, and in compliance with the requests of the great powers. In the democratic cantons, in which the people were not oppressed by their cantonal authorities, they were often disgusted with these servile compliances of the diet; but in the aristocratical cantons, in which almost all the authority was in the hands of some patrician families, or the corporations of the trades, it was often abused to oppress the mass of the people. This was particularly the case in Berne, Basle, Friburg, Lucerne, Zürich, Schaffhausen and Soleure. Still a third class of cantons was composed of the new members of the confederacy, professedly organized on popular representative principles, but in which, in 1815, the elections were so arranged, that the whole power, in fact, was possessed by a small executive council. In this state of things, the general demand for reform, in the electoral assemblies of Tessin (one of the new cantons), compelled the council (June, 1830) to yield to the public voice, and establish a system of direct elections, and of publicity of proceedings in the great council, and to guarantee the liberty of the press, and the inviolability of persons, as parts of the constitution. This event, and the French revolution of July, 1830, set the example for general risings in various parts of the country. In the new cantons, the popular demands were generally so readily complied with as to prevent any serious disturbances, and the democratic cantons took hardly any part in the troubles; but in the old aristocratic cantons, the opposition was stronger and more systematic. Still, as many of the towns people were favorable to more popular institutions, the governments, even in these cantons, generally yielded, with little opposition, to the wishes of the citizens; and in Friburg, Berne, Lucerne, Soleure, Schaffhausen, the revision of the constitution, the abolition of privileges, the extension of the right of election, abolition of censorship of the press, &c., were among the concessions to popular rights. In Basle alone, where the peasantry are more ignorant and rude than in the other cantons, the insurgents were not satisfied with the concessions; and a second insurrection, in the summer of 1831, was not put down without bloodshed. The ordinary session of the diet took place at Lucerne, July 4, 1831, and the common concerns of the confederacy, both in its foreign and domestic relations, were found to be in a satisfactory condition. But towards the close of 1831, the canton of Neufchatel (q. v.) was disturbed by risings of some portions of the population, who renounced the authority of Prussia, and demanded a new constitution. The insurgents were put down; and the country has since been tranquil. Switzerland, the most elevated country in Europe, consists chiefly of mountains, lying near together, or piled one upon another, with narrow valleys between them. The highest mountains (among which are St. Gothard, in the canton of Uri, and the Finsteraarhorn, in the canton of Berne, 14,100 feet above the level of the sea) are found in Uri, Berne, Underwalden and Grisons. Of about sixty Swiss mountains which have been measured, the highest is Monte Rosa (q. v.), 15,535 feet high; the lowest, Cholet, is 3000 feet high. (See *Alps.*) The lowest region of the productive mountains is covered with thick forests and rich meadows; the middle consists of hills and narrow passes, containing pastures; the third region is composed of sharp and almost inaccessible rocks, either wholly bare, without earth or grass, or covered with perpetual ice and snow. The middle regions are inhabited in summer by herdsmen, who find good pasturage for their cattle, and obtain excellent water from the mountain springs and streams. The herdsmen give an account of the milk, butter and cheese, to the owners of the cattle, or pay them a stipulated portion of the proceeds. (See *Senn.*) The glaciers (q. v.), more than 400 in number, are either the barren parts of the mountains, or heights which consist only of snow and ice. These icy mountains begin in the canton of Glarus, and extend to the Grisons, thence to the canton of Uri, and, finally, down to Berne. The glaciers are produced by rocky valleys, whose declivities are too small to admit of the ready descent of the water of the melted snow and ice, so that they are gradually filled up by vast masses of snow and ice, which accumulate in them. The continual alternation of hill and valley affords the most striking natural scenes in every part of Switzerland. In some places, within a short distance, one may see at the same time all the seasons of the year; and it is often possible to stand between spring and summer, so as to collect snow with one hand, and to pluck flowers from the soil with the other. Every mountain has its waterfalls; and, as their sources are sometimes lost in the clouds, the cataracts seem to descend from the skies. Switzerland abounds in lakes and rivers, the fisheries of which are valuable, and which serve to embellish the landscape. But none of the streams are navigable. The lake of Zürich, one of the largest in Switzerland, is twenty-five miles in length by three in breadth. The lake of Geneva is about fifty miles long and eight to ten wide. The lake of Neufchatel, twenty-eight by six, and the lake of Lucerne or the Vierwaldstädtersee, twenty-five miles long, and, where widest, as many broad, are celebrated for their beautiful environs. The largest rivers are the Rhine, the Reuss or Rüss, the Rhone, and the Tessino or Ticino. The Rhine is remarkable for its falls, and the Reuss for a bridge, called the Devil's bridge, which leads over it in the canton of Uri. It connects two mountains, between which the water rolls at the depth of seventy-five feet below it. There are springs of excellent water among the hills, with warm and cold baths, and mineral springs. In Thurgau, a part of Zürich, Basle, Schaffhausen, Berne, Soleure and Friburg, every thing is different; for, although there are some mountains, yet this part of Switzerland is more level; there are here no Alps, no cataracts, few trees, and, in summer, neither ice nor snow. In general, the foot of the mountains almost every where is covered with farms, meadows, vineyards and trees; and even amidst the rocks, there are numerous cultivated patches. Switzerland is rich in minerals, especially lime and clays, slate, black, gray and dark-red marble, porphyry and alabaster (especially in Valais); also quartz, crystals (weighing sometimes 7—8 cwt.), peat, coal, &c. Silver, copper and iron ore likewise occur. Gold dust is found in the rivers. The flora of Switzerland is peculiarly rich. The cultivation of the vine is carried to a great extent, and a considerable trade is carried on with France, Holland, England and Suabia. Fruits are abundant, but corn is not produced in great quantities, owing partly to the great numbers of cattle which are raised here. The breeding of cattle is the chief employment of the inhabitants, for which the rich pastures of the valleys and hills afford great advantages. The Swiss cheeses are imported in great numbers into Germany, France and Italy. Of the wild animals, the most important is the chamois (q. v.); the ibex, the marmot, and the *lämmergeier*, or vulture of the Alps, are also found. As to manufactures, those of linen, cotton, and, of late years, silk, are the most important. The Swiss confederacy, according to the terms of the federal compact between the twenty-two cantons (Zürich, Aug. 7, 1815), is a federative state of twenty-two republics, who conduct their domestic concerns wholly independently of one another. Appenzell and Underwalden, however, consist of two distinct parts; and, in 1832, Basle was also divided into two Rhodes. The confederacy, as its limits were determined by the congress of Vienna (art. 74—84), contains an area of 18,490 square miles, or, according to some, of 14,769, with a population, in 1827, of 2,037,030 persons. Among them are 1,217,210 Protestants (mostly Calvinists), 817,110 Catholics, 900 Anabaptists, 1810 Jews, in 92 cities, 100 market towns, 7400 villages and hamlets. The size and population of the cantons are as follows:—

Cantons.	Sq. miles.	Population.
Zürich, ...	953	224,150
Berne, ...	3665	356,710
Lucerne, ...	762	105,600
Uri, ...	508	13,930
Schweitz, ...	466	36,040
Underwalden, ...	258	23,150
Glarus, ...	460	28,000
Zug, ...	116	14,710
Friburg, ...	487	67,814
Soleure, ...	487	54,380
Basle, ...	275	55,330
Schaffhausen, ...	169	28,050
Appenzell, ...	222	57,510
St. Gall, ...	847	157,700
Grisons, ...	2966	98,090
Aargau, ...	762	152,900
Thurgau, ...	349	89,845
Tessin, ...	1133	103,950
Pays de Vaud, ...	1483	178,880
Valais, ...	1949	77,570
Neufchatel, ...	296	56,640
Geneva, ...	95	53,560

Consequently Geneva is the most populous; next comes Appenzell; the least populous cantons are the Grisons, Uri and Valais. The German language is common to nearly the whole country, with the exception of the Pays de Vaud, Geneva and Neufchatel, and a part of the cantons of Valais and Friburg, where the French prevails. Italian is spoken only in a part of the Grisons and in Tessin; Romanish at the sources of the Rhine and Ladin, on the Inn. The Germans are 1,428,671; French, 438,489; Italians, 119,970, and those who speak the Ladin and Romanish languages, 48,090. The prevailing religion is, in some of the cantons, Catholic; in others, Calvinism; and in others, mixed. There are 120 monasteries, of which Tessin has the most (18); 59 for monks, and 61 for nuns; among them are seven Capuchin houses. In 1815, Switzerland contained all that had previously belonged to it, with the exception of Mühlhausen and the Valteline. Frickthal, with the cities of Lauffenburg and Rheinfelden, which belonged to Austria, were annexed to the canton of Aargau. Gersau (for 500 years a free state, and the smallest in Europe, with 1294 citizens, mostly engaged in the manufacture of silk), by an act of the congress of Vienna and the decision of the diet, was again made a part of the canton of Schweitz. In 1815, France ceded some places in Gex, and the king of Sardinia the city of Carrouge, with some villages on the left shore of the lake and on the Rhone, to Geneva. The fortress of Hüningen, in Alsace, opposite to Basle, has been demolished. The castle and lordship of Rhäzins, above Coire, on the Rhine, in the Grey League, which formerly belonged to Austria, were ceded to the Grisons by an act of the congress of Vienna, Jan. 19, 1819. The diet, which is composed of the representatives of the cantons, and which manages such affairs of the confederacy as are committed to it by the sovereign cantons (such as the declaring of war and making of peace, the concluding of commercial and other treaties with foreign states, the regulation of the federal army, &c.), is held every two years, alternately at Zürich, Berne and Lucerne, which are called the directing cantons (*vororte*). The *Schultheiss*, or governor of the directing canton in which the session is held, then takes the name of *Landammann* of Switzerland. Each canton has one vote in the diet. Military capitulations, and treaties on subjects of police and economical regulation, may be entered into by the separate cantons with foreign states; but not without the knowledge of the diet. The revenue of the confederacy, arising from the contingents of the cantons, is about 2,000,000 dollars. The public debt, fixed by the congress of Vienna, in 1814, at 3,118,330 Swiss francs, has been cancelled by the interest accruing, from 1798 to 1814, on the capital (£200,000 sterling, and £100,000 sterling) invested by the cantons of Berne and Zürich in the bank of England. The property of this sum is, however, reserved to the two cantons, and also the interest accruing since 1815. The federal army was fixed (Aug. 5, 1816) at 67,516 men, of which half is a reserve. In 1819, an artillery school, or scientific and practical military academy, was established at Thun, by the confederacy; and, in 1820, the first camp for military practice was held at Wohlen. Each canton is governed by its own laws, and the government is administered by a great council, which holds the legislative power, and the small council, which holds the executive, or by the *Landesgemeinde* (or general assembly of citizens), and the *Landrath* (an executive council). In Uri, Schweitz, Underwalden, Zug, Glarus, Schaffhausen, Appenzell (Inner and Outer Rhodes), St. Gall, Grisons, Aargau, Thurgau, Ticino, Pays de Vaud, Valais and Geneva, the constitutions are democratic; in the remaining cantons, they are of a mixed aristocratic and democratic character. Neufchatel has a monarchical government, with estates. The literature of Switzerland is a branch of the German; that of Geneva, the Pays de Vaud and Neufchatel, of the French. There is a university at Basle, and the academies of Berne and Zürich have scientific collections. At Lucerne, Winterthur, Zopfingen, and other cities, there are libraries, and cabinets of natural and artificial curiosities. Several learned societies, particularly those for natural history, are distinguished for activity and zeal. The school of Pestalozzi (q. v.) at Yverdun, and the agricultural institute of Fellenberg (q. v.) at Hofwyl, are celebrated. In 1824 appeared at Zürich *Kritische Anzeigen der Schweizerischen Literatur* (Critical Notices of Swiss Literature), containing a notice of the best works printed in and concerning Switzerland, and of the labors of Swiss literati abroad. The history of Switzerland by John von Müller (q. v.) is a classical work: it has been continued by Glutz-Blotzheim to the perpetual peace with France in 1516. His valuable labors were interrupted by an early death. Balthasar's *Helvetia, oder Denkwürdigkeiten für die 22 Freistaaten der Schweizerischen Eidgenossenschaft* (Helvetia, or Memoirs of the 22 Republics of the Swiss Confederacy, 1st vol., Zürich, 1823), may be joined with it. Zschokke's History of the Swiss Nation (in German, Aarau, 1822; French by Monnier) is a masterly work. Lardner's Cabinet Cyclopædia contains a short history of Switzerland. Raoul-Rochette's *Histoire de la Révolution Helvétique de* 1798—1803 (Paris, 1823) is less accurate and impartial than Zschokke's Historical Memoirs of the Helvetic Revolution. On the ancient history of the country, see Haller's Historical and Topographical Account of Helvetia under the Romans (2 vols., 3d edit., Berne, 1818). On Swiss public law, Usteri's Manual is valuable (2d edit., Aarau, 1821); also the Helvetic Almanac, and Picot's *Statistique de la Suisse* (Geneva, 1819). Lutz's Complete Description of Switzerland (in German, alphabetically arranged, 2d edit., Aarau, 1827, 3 vols.), is a valuable work. (See the separate articles, *Basle*, *Berne*, *Geneva*, *Lucerne*, *Neufchatel*, *Chaux de Fonds*, *Zürich*, &c.)

Travels in Switzerland. This beautiful country is so much visited, that it may, perhaps, be acceptable to our readers to have a few of the best guide-books pointed out, and a few directions given for the traveller. Ebel's Guide to the most useful and pleasant Way of Travelling in Switzerland (3d ed., Zürich, 1810, 4 vols., in German) is the best companion. It embraces all Switzerland. The abridgments which have appeared in Geneva and Paris are not satisfactory. Reichard's *Guide des Voyageurs en Italie et en Suisse* (Weimar, 1819); also Glutz-Blotzheim's Manual for Travellers in Switzerland (in German, 5th ed., Zürich, 1823); the *Nouveau Guide des Voyageurs dans les XXII Cantons Suisses, traduit d'un Manuscrit Allemand du Professeur H. par R. W.*; and Simond's Tour in Switzerland (Boston, 1822), deserve to be mentioned. Coxe's Travels describes the state of the country before the French revolution. The late numbers of the Helvetic Almanac afford an accurate view of the statistics of the different cantons. Of works relating to particular parts of Switzerland, the best are Ebel's Description of the Mountaineers of Switzerland (Tüb., 1798—1802, 2 vols.), and, above all, Travels in the Bernese Oberland, by J. R. Wyss (Berne, 1816, 2 vols.), with excellent maps. The same region is described in *Voyage pittoresque d'Oberland, accompagné de Notices historiques et topographiques* (Paris and Strasburg, 1812). Of the maps of all Switzerland, that published by Keller and Scheuermann (Zürich, 1815 and 1819) is particularly worthy of attention. The great atlas of Weiss embraces only a part of Switzerland. For the use of naturalists, we mention *Manuel d'Herboriser en Suisse et en Valais, rédigé selon le Système de Linné* (Winterthur, 1811); and *Précis d'un Voyage botanique fait en* 1811 *par Villars, Lauth et Nestler* (Paris, 1812).—For travelling in Switzerland, the months of July, August and September afford the most settled weather. The most delightful season is in September, and often even in October, when the shores of the lakes of Geneva, Neufchatel and Bienne, and the charming scenes in the Pays de Vaud, enchant the visitor. The beginning of summer, and even the close of spring, are often equally favorable. The Alpine meadows, which are then decked with the most beautiful and rarest flowers, delight the eye, and afford rich stores to the botanist. The curious atmospheric phenomena, which are frequently seen, and on elevated mountains, even below the spectator, afford a new and sublime spectacle. The mild warmth, and the long days, render travelling, at this period, peculiarly pleasant. May, however, is commonly more beautiful than June, which is often rainy. Most travellers devote only six or eight weeks to visiting Switzerland, and limit themselves to the most interesting parts. With a proper and systematic plan, one can travel through all the cantons in three and a half months, if he proceeds mostly on foot, and remains in every place only as long as is necessary to view all its curiosities; but, owing to the frequent changes of weather, it is impossible to reckon upon three weeks in succession dry and warm: as much as fourteen days, therefore, ought to be allowed out of the three and a half months for obstructions from rain or storms. There are no proper extra posts in Switzerland, though persons travelling in their own coaches may procure a change of horses. There are good regular coaches, however. Most travellers who arrive at the frontier places in the post-coaches, or in their own carriages, hire the horses and carriages which are always in readiness in the towns. The prices at which horses and mules are let, are high. The horses and mules are so used to the steep and rocky mountain roads, that, even on the brink of a deep precipice, the traveller feels himself perfectly safe. Those should be chosen, however, which have been used to carry, and not to draw. Roads lead over the Cenis, the Simplon (q. v.), and, since 1818, over the Splügen. The road over the Simplon may well be compared with the proudest works of the ancient Romans. (See *Alps*, *Roads over*.) Over the other summits, no one can travel, except on foot, or, perhaps, part of the way on horseback. In the valley of Chamouni, and in Grindelwald, there are very low and small four-wheeled carriages, which are extremely inconvenient It is possible to travel in these a part of the way, also, over the great mountain of St. Bernard. On account of the sudden changes of weather and the cold air on the mountains, it is necessary to be provided with warm clothing. The traveller, on excursions, should wear a light and easy dress, with half-boots, or, what is still better, shoes with gaiters, fastened tight about the feet to prevent gravel from getting in. A traveller should provide himself with two pairs of shoes, very strong, with thick heels and large-headed nails, to be worn over stony passes, in wet weather, and on glaciers; and with light ones for the smooth plains. Experienced travellers disapprove of the common irons fastened to the shoes. The Alpine shoes, invented by Pictet, are very good. The soles are at least six lines in thickness, with a strong but pliable upper leather, covering the whole foot, and with a covering of leather rising about one and a half inches above the sole, to secure the foot from any blow. Large steel nails, or rather screws, with heads somewhat more than four lines wide, which resemble a truncated four-sided pyramid, are inserted in the soles and heels, about seven in the former and five in the latter. In the intervals between the steel nails, common nails are driven in so that the heads touch one another. With this durable and not heavy shoe, one may walk safely over the naked granite, over ice and smooth grass. A staff, pointed with iron, is indispensable.

In warm weather, a straw hat is preferable to a felt one. A cloak, of oiled taffeta or oiled linen, to keep off the rain, is very convenient and warm, and, for this reason, a good protection on the high mountains or in a piercing wind. The traveller should also take a flannel shirt, the best protection against sudden colds, light woollen pantaloons, and a great coat of light cloth; also a covered flask for cherry brandy to bathe the tired limbs. The best comes from Grindelwald. To the mineralogist, the apron of thin leather, invented by Pictet, deserves to be recommended. It is never well for one to travel on the mountains alone, nor, on the other hand, in company with more than three or four persons, because of the scanty accommodations of the inns in the small places. A guide should always be procured; and very intelligent ones are easily to be met with. If a person is not used to walking, he should begin with short journeys every day; but walking in Switzerland, even for females, is not so difficult as is commonly supposed. The mountains should be ascended, where it is possible, on the western side. The best descent is on the eastern declivities. It is unsafe to travel on the high mountains in spring until after the avalanches have rolled down the sides. After a long and violent rain, a person should wait two days before traversing the high valleys among the rocks, where pieces are liable to fall from the sides at such seasons. In snowy vales and among the glaciers, it is well to cover the face with a green or dark gauze. Volatile alkali, diluted with water, mitigates the burning pains in the face, caused by the bright reflection of the sun's rays from the fields of snow and the glaciers. One should never travel over the glaciers after a fresh fall of snow (which sometimes happens even in the summer months), particularly at mid-day; for a traveller might then very easily break through the soft mass. To these rules the traveller will easily add such as his own experience may suggest. Many circumstances combine to make travelling in Switzerland more expensive than in the adjacent countries. But few of the cantons produce the necessaries of life in sufficient quantities for the inhabitants. In many places, the people are obliged to procure them from a distance; and then the expense of conveyance augments the price. Inn-keepers on the mountains and in retired valleys are especially subjected to this advanced price, and are, therefore, obliged to charge higher than those in cities and frequented roads. The hotels, in towns and in large villages, often even in the rudest Alpine vales, as in Lauterbrunnen and the valley of Chamouni, are very good. In Italian Switzerland, and generally beyond the southern chain, it is common to agree upon the price to be paid to inn-keepers, guides, servants, and the like, beforehand; for otherwise a person is very liable to be imposed on. The expenses for one who makes only a short stay at the various places, are, of course, greater than for one who remains longer. If a person devotes five or six months to travelling through Switzerland, in a carriage or on horseback, his daily expenditure will amount to twelve or sixteen Swiss francs;* but if he limits himself to six, four or two weeks, his expenses will be at least eighteen francs a day. If he travels on foot, and has a guide who carries his luggage, twelve francs a day will be sufficient. The difference in the standard of money in the different Swiss cantons is inconvenient, particularly since some cantons have begun to refuse to admit the money of others. The Manual of Glutz-Blotzheim, before mentioned, presents a useful view of the worth of the different coins. The old louis-d'or (twenty-four livres tournois), the French twenty franc piece, the Brabant, Bavarian and Würtemberg dollar, and French five franc piece, are in most general circulation. The reckoning by Swiss francs (sixteen to a louis-d'or) is pretty general. In the hotels they reckon much by French francs. Any one who intends to visit all the cantons can proceed in the following order—either through Constance, Schaffhausen, Eglisau and Winterthur, or through Lindau, the lake of Constance, Roschach and St. Gall, to Zürich (see *Voyage de Zuric à Zuric*, 1818); then over mount Albis to Zug, over lake Zug to Arth, at the foot of the Righi (q. v.), of which Fuessly and Keller have published beautiful sketches, with a description by J. H. Meyer (Views of Mount Righi, drawn from nature, Zürich, 1809); over the lake to Lucerne (q. v.), which Businger describes in his guide—Lucerne and its Environs, with a good Map of the Lake of the four Forest-Towns (Lucerne, 1811). The traveller now enters on the route over the mountains. The way leads through Stanzstadt, Stanz, the abbey of Engelburg, and over the Surenian Alps; or from Stanz through Buochs, over the lake of the four Forest-Towns, Rütli,

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* A Swiss franc is about twenty-seven or twenty-eight cents.

Tell's Chapel to Altorf. Thence you pass on the great road from German Switzerland to Italy, in three days, to Bellinzona. Through Ursern, the road leads from Altorf to Dissentis, and the adjacent springs of the Rhine; and further through Trons to Coire, where a traveller who wishes to visit Graubündten (the Grisons, q. v.) stops. Among the principal curiosities of the Grisons are the valley of omlesch, the bridge of Solis, which is the highest in Europe, the Via Mala, the glaciers of the Rhine, the valley of Misocco, the glacier of Bernina. From Coire, the traveller pursues his journey through Sennwald to Appenzell and Gais, and then through Utznach and Einsiedeln; or, if he does not intend to visit first the bath at Pfeffers (q. v.), through Panyx, Elm and Matt, to Glarus, and thence to Einsiedeln, from which he returns, over Schweitz and the ruins of Goldau, to Lucerne. Then he goes through the charming Entlibuch, or over the battle-field of Sempach, through Zopfingen, Morgenthal, Hindelbank, Hofwyl (q. v.), to Berne. (q. v.) From Berne, the traveller proceeds over Thur, in four to six days (including the time occupied in returning through Interlaken and Brientz), to the beautiful Oberland, to Lauterbrunnen, to Staubbach, over the little Scheideck to Grindelwald, at the foot of the Jungfrau (first ascended by the two Meyers in Aarau, 1811 and 1812; see *Travels over the Glaciers of Berne*, Aarau, 1813), and of the Schreckhorn, and over the great Scheideck to Haslithal. From Merzringen, the chief place in the valley, those who have not travelled from Altorf to the hospice of St. Gothard can go by the new road through the Susten valley. The hospice on the Grimsel, 5887 feet high, is particularly worthy to be visited. Thence the traveller proceeds to the glaciers of the Rhone. From Berne he goes through Murten and Avenches, or Friburg, Murten, Avenches, Payerne, Lausanne, Aubonne, to Geneva. Thence he proceeds to the icy heights and glaciers of the valley of Chamouni, either through Thonon, Evian, Simoens and Sixte, or through Bonneville and Salenche, to Servoz; thence on to Chamouni, at the foot of Mont Blanc (q. v.), which requires three days. The glacier of Montanvert and La Flechière, opposite to it, are commonly the limit in this direction. The best guides are Saussure's and Bourrit's works, Pictet's *Itinéraire*, and Gottschalk's description (the Valley of Chamouni, Halle, 1811), with a map. In 1812, Lori published some beautiful views of the valley of Chamouni. If the traveller does not return from Chamouni to Geneva, he either takes a difficult path through the valley of Valorsine, and over the village of Trent, or the Col de Balme, to Martigny, at the foot of the Great Bernard. From this place, one may go over the Simplon road to the Borromean islands (to go and return, six or seven days are necessary), or over St. Branchier to the Val de Bagnes (where, in 1818, owing to the fall of the glacier Getroz, lake Mauvoisin broke through its banks, and spread fearful devastation); then to the hospice on St. Bernard, and back to Martigny, which requires three days. A good map of the mountain was published by Lapie (Paris, 1803). A full description of it is given by Wibel of Berne in his *Voyage Pittoresque depuis Lausanne jusqu'au Mont Bernard*, ornamented with fourteen colored plates. From Martigny, the traveller goes through St. Maurice, by the Pissevache, or, by a circuitous way, which well rewards him for his trouble, through Sitten, and along the new road, so called, over mount Azeindaz, to Bex (where the remarkable salt mines may be seen), and then through Aigle and Clarens to Vevay, whence the traveller may proceed by water to Geneva, if he does not wish to go by land through Lausanne. On the opposite shore of the lake, the road passes through Meillerie and Evian to Geneva; then through Orbe, adjacent to the beautiful valley of the Lac du Joux and the valley of Romainmotier, to Yverdun (q. v.), and along the lake to Neufchatel (q. v.), whence a visit may be paid to the manufacturing villages Chaux de Fonds (q. v.) and Locle (in the neighborhood of the latter is the Saut de Doubs); from Neufchatel through Bienne, or Aarberg, to Soleure (q. v.), near which rises the Weissenstein, affording from its summit a fine view of the wide valley that divides the Jura (q. v.) from the Alps. It is one of the most splendid prospects in Switzerland. If a person wishes to go through the Münster valley to Basle (q. v.), he must return to Bienne; and, following the directions in Bridel's text to Birrmann's *Voyage Pittoresque de Bâle à Bienne*, two days are requisite to pass over the road leading through Pierre Pertuis, an ancient Roman gate of rock, forty feet high. If one desires to visit the principal curiosities in Switzerland in six or eight weeks, it is best to pursue the following course:—Schaffhausen, Zürich, Zug, Righi, Lucerne, Schweitz, Altorf (perhaps to the hospice on mount Gothard), Berne, Oberland, to Meiringen; from Berne to Lausanne, Geneva; thence to the valley of Chamouni, to Chamouni or Martigny (perhaps along the Simplon road to Domo d'Ossola, or to the hospice on mount Bernard), and, in the way before mentioned, through Bex, Vevay, Yverdun, &c., to Basle. In two or three weeks, the following journey may be made: through Basle, Münsterthal, Bienne, Soleure, Berne, Oberland, Hofwyl, Lucerne, Righi, Schweitz, Zug, Albis, Zürich, Schaffhausen, Constance. If a traveller wishes to visit particularly French Switzerland and the Savoy Alps, he can perform the following journey in about twenty-five days: Schaffhausen, Baden, Aarau, Berne, Friburg, Vevay, Bex, St. Maurice, Martigny, Val de Bagnes, Col de Balme, Chamouni, Geneva, Lausanne, Bienne, Münsterthal, Basle. Since Aberly, the following artists have distinguished themselves by views of scenes in Switzerland: Rieter, König, Hegi, Fuessly, Keller, Birrmann, Wocher, and the two Loris.—See, also, Wetzel's *Voyage Pittoresque aux Lacs Suisses* (Zürich, 1824, containing eighty-five plates).

Swivel; a small piece of artillery, carrying a shot of half a pound, and fixed in a socket on the top of a ship's side, stern or bow, and also in the tops. The trunnions of this piece are contained in a sort of iron crotch, whose lower end terminates in a cylindrical pivot resting in the socket, so as to support the weight of the cannon. By means of this swivel (which gives name to the piece of artillery) and an iron handle on its cascabel, the gun may be directed by hand to any object.—*Swivel* is also a strong link of iron used in mooring-chains, &c., which permits the bridles or cables to be turned as occasion requires.

Sword. This weapon, probably because it is more constantly carried about the person than other weapons, such as the arrow, spear, &c., has acquired a peculiar connexion with the circumstances of the wearer. To this day, the surrender of the sword denotes submission, and the breaking of it degradation. In many countries, it has become the emblem of power. In Germany, the sword was one of the imperial insignia. In Turkey, the sultan is girded with the sword of Osman on ascending the throne. In England, the sword of state is one of the regalia, and the "offering of the sword" one of the ceremonies of coronation. In France, the sword is also one of the royal insignia. In the middle ages, knights gave names to their swords; thus Charlemagne's sword was called *Joyeuse*, and Orlando's *Durindana*. The efficacy of no other weapon depends so much upon the courage and skill of the individual. It is the poetical representative of all arms; and, in the middle ages, the word *degen* (sword) was used in German to denote a worthy man; later, a servant, but a servant of a dignified character, and a free man. In this sense, Otfried, in his translation of the Gospels, calls John the Baptist *Christi Thegan*. In a German poem of the fourteenth century, the apostle Peter is called *Gotes Degen*, and the *forste* and *senat* of all apostles. *Thane*, which is derived from the same word, is also an Anglo-Saxon title of honor familiar to the readers of Shakspeare. Under the emperors of Rome, no one was allowed to wear a sword except soldiers; hence the custom of presenting the sword on investing with a military dignity. Trajan, when he made Sura Licinius commander of his guards, put a naked sword into his hands, with the words, "Take this, and use it for me if I rule well, against me if I rule ill." The secular infeoffment of crown vassals, in the middle ages, was performed by presenting the vassal a naked sword. To this day, decapitation with the sword is considered more honorable than hanging, in those countries where both modes of execution are in use, as in many on the continent of Europe. In England, the axe is used, and only in cases of high treason. As soon as the art of forging metals was invented, arms of metal were probably made; and the sword must have been one of the first, as the club, and similar weapons, would naturally lead to it. Wooden swords are found at present among many savage tribes. Some historians mention Belus, king of Assyria, as the inventor of the sword. The Greeks ascribed the invention, according to Diodorus, to the Cretans. From the Scriptures we learn that swords were used in the earliest times in Asia. Abraham drew his sword to sacrifice his son Isaac. The knife probably originated from the sword by degrees. The knife, in many countries, as in Spain, is still a formidable weapon. Swords were probably made at first, like other weapons, of copper, as men acquired the art of forging this metal sooner than any other. The heroes of antiquity never appear without the sword. Whether the Greeks wore it on the left or right side is not determined; but the Romans, as long as they used short swords, wore them high on the right side, as ap pears from the bass-reliefs of the columns of Trajan and Antoninus at Rome; and Polybius explicitly states this fact in his history (vi, 21). The kinds of swords are too numerous to be given here. The straight, long sword was used by the Christians of the West in the middle ages, while the Poles, and all the tribes of Sclavonic origin, employed, and still prefer, the crooked sword. The Saracens also had the crooked sword at that time; and it is still the common one in Asia. At present, light cavalry in Europe, as hussars, lancers, &c., wear the crooked sword, while the straight, long sword is the weapon of the heavy cavalry. The latter is, generally speaking, a better and more trustworthy weapon. In the middle ages, double-handed swords also were worn; and in books on the art of fencing, this branch is treated, as is also the art of fighting with the dagger. It was an unwieldy weapon, and probably originated from the wearing of plate armor. The sword of the executioners is, to this day, a double-handed one; but, as it requires considerable skill and coolness, it has been exchanged, in most countries, for the heavy axe. The Highland claymore, a broadsword with a basket hilt, has been introduced into the Highland regiments in the British service. The blade of a sword is divided into the upper, middle and lower part, or the *forte*, *middle* and *foible*. Fencing with the small sword and the broad sword are quite different arts. The former is of a much nobler character. (See *Gymnastics*.) Some places, as Toledo, Saragossa, Damascus, are particularly celebrated for fine sword blades.

Sword-Fish (*xiphias*); a genus of fishes, remarkable for having the upper jaw prolonged, somewhat in the form of a sword, and constituting at least one third of the total length. It is placed by Cuvier in the same family with the mackerel. The body is elongated, almost destitute of scales, and is carinate on each side at the base of the tail. There are no proper teeth.—The common sword-fish (*X. gladius*) is sometimes more than twenty feet long, the beak included. It swims with greater swiftness than almost any inhabitant of the deep, and is possessed of vast muscular strength. It attacks, and generally puts to flight, the smaller cetaceous animals, notwithstanding its food is usually vegetable. Its flesh is good; and, in some countries, the fishery is an object of importance. It is taken with the harpoon, and usually tears the net, if enclosed. The female approaches the shores in the latter part of spring or beginning of summer. The sword-fish is found in almost all seas.

Sybaris; an ancient Greek city of Lower Italy, in Lucania, on the gulf of Tarentum. It is supposed to have been built by a colony of Achæans and Trœzenians, about 720 B. C. The Sybarites were celebrated for their luxury and voluptuousness, and had become enervated by the mildness of the climate, the richness of the soil, and their great wealth. Becoming involved in a war with Crotona, the city of Sybaris brought into the field 300,000 men, while the forces of the former amounted to but 100,000. The Crotonians, however, were victorious, and totally destroyed Sybaris.—*Sybarite* is still used to signify an effeminate voluptuary.

Sycamore. This term was given by the ancients to a species of fig (*ficus sycomorus*). By the moderns, it is applied to a European species of maple (*acer pseudoplatanus*); and, in the western parts of the U. States, to the Occidental plane, or button-wood. (See *Fig*, *Maple*, and *Plane*.)

Sycophant, with the Athenians; a man who denounced others on account of violations of law, or kept watch on their doings in order to misrepresent them, and to make them the basis of an accusation. The name is derived from *συκον*, a fig, and *φαινω*, I discover, and was originally applied to certain persons who gave information of such as, contrary to the Athenian laws, exported figs. Subsequently, every false accuser, cheat, or other wretch, who strove to injure men, whether by legal process or in the course of ordinary dealing, was called by this name. It was in Athens a term of great reproach.

Sydenham, Thomas, a celebrated English physician, was born in Dorsetshire, in 1624, and, in 1648, took the degree of bachelor of medicine at Oxford. He subsequently commenced practice as a physician at Westminster, and speedily attained great reputation. From 1660 to 1670 he held the first place in his profession, though it was not till the latter part of his career that he became a licentiate of the college. Being a great sufferer from the gout, he was unable, in the latter part of his life, to go much from home; but he continued to benefit society by his writings and advice till near the time of his decease, in 1689. Doctor Sydenham's improvements form an era in the history of medicine. He first applied himself to an attentive observation of the phenomena of diseases, founding his practice on the obvious indications of nature, rather than on prevalent theories, drawn from the principles of chemistry or mathematics. Febrile disorders attracted his especial notice, and, in 1666, he communicated to the public the result of his observations, in a work entitled *Methodus curandi Febres propriis Observationibus superstructa*, which was re-printed, with additions, under the title of *Observationes Medicæ circa Morborum acutorum Historiam et Curationem* (1675). Among his principal works are *Epistolæ Responsoriæ duæ*, 1. *De Morbis epidemicis a* 1675 *ad* 1680; 2. *De Luis venereæ Historia et Curatione* (1680); *De Podagra et Hydrope* (1683, 8vo.); and *Processus integri in Morbis fere omnibus curandis*, published posthumously.

Sydney; capital of the British colony of New South Wales, in Australia; lat. 33° 15′ S.; lon. 151° 15′ E.; population, about 12,000. Sydney is situated on a cove, on the south side of Port Jackson, about seven miles from its mouth. The water is of sufficient depth to allow ships of the largest size to come close up to the shore. Port Jackson is one of the finest natural basins in the world, stretching 15 miles into the country, with numerous creeks and bays. The anchorage is every where excellent, and ships are protected from every wind. The streets of Sydney are built without any regular plan, and the town covers a considerable extent of ground. There are several banks, a savings institution, schools for the poor, and several higher seminaries. Several newspapers, and other periodicals, are also published at Sydney. The value of the imports, in 1828, was £570,000; that of exports about half as much, but rapidly increasing. In 1825, there belonged to Sydney thirty-four vessels of the burthen of 4129 tons. The whale and sea fisheries are carried on from here with success. (See *New South Wales*.)

Sydney; a free port in the eastern part of the island of Cape Breton, on a bay, which is sometimes called *Spanish River*, and sometimes *Dartmouth Harbor*. The entrance of the harbor is about two miles wide. The harbor itself is very large and well protected. The town stands at the head of the harbor, in a very pleasant situation, and seems to enjoy great local advantages as a commercial place. There are mines of good coal on the western side of the harbor, and the place is admirably situated for trade in lumber and fish. Still, it is neglected; and the population is only 450 or 500. It is the seat of justice for the whole island. The public buildings are the barracks, government store, commandant's house, court house, three houses of worship, and a market house. The town is well built, and has a pleasant surrounding country. Sydney is important, at present, in a commercial view, principally on account of its extensive coal mines. A great portion of the coal exported from this island has been derived from these mines; and the quantity exported from the island in 1828 was 10,000 chaldrons.

Sydney. (See *Sidney*.)

Syene, or **Assuan**, or **Essouan**; a town of Upper Egypt, on the east side of the Nile, six miles below the first cataract; lon. 32° 55′ E.; lat. 24° 5′ N. It is the most southerly town of Egypt, forming its frontier towards Nubia. It is celebrated in the annals of ancient astronomy, for the attempt made, about 276 B. C., by Eratosthenes (q. v.), to measure the height of the sun, according to which Syene was said to lie directly under the tropic. A well was formed, which was supposed to mark the precise moment of the summer solstice, by the image of the sun reflected in it. But according to modern observations, Syene is found to lie 37′ 23″ north of the tropic. In the Nile, opposite to the town, is the island of Elephantina, remarkable for its ancient ruins and quarries of stone. There are, also, some ruins at Syene. (See Burckhardt's *Nubia*.)

Syenite. (See *Sienite*.)

Sygambrians, or **Sicambrians**; a German tribe, which occupied the country on the Rhine, from Emmerich southwards, to the Sieg, and on the Lippe eastwardly, to the frontiers of the Bructeri. After the victories of Germanicus (q. v.) we hear nothing of them for some time; but when the Romans, by the command of Claudius, withdrew to the west bank of the Rhine, the Sygambri re-occupied their former seats, and, at a later period, formed one of the great confederacy of tribes who took the common name of Franks. (See *Germany, History of*, and *Franks*.)

Sylla. (See *Sulla*.)

Syllabic Alphabet. (See *Syllable*.)

Syllable (from the Greek συλλαβή, literally *comprehension*, or *collection*) is the least natural division of articulated speech, or, in other words, syllables are the natural elements of speech. Men have gone farther, and, in most languages at least, have divided syllables again into letters; but the circumstance that the consonants cannot be pronounced without the aid of vowels (hence their name), or as syllables, shows the natural division of words into syllables. We may then say, with Adelung, a syllable is a sound produced by a single opening or closing of the mouth, and, consequently, consists of one vowel or diphthong, or of either together with one or more consonants. This definition has some few exceptions, according to the artificial divisions of some languages: in general it is perfectly correct. A vowel is always necessary for a syllable, though it may not always be written, nor even be supposed, by particular nations, to exist. It is evident that it would be impossible to pronounce such a word as *Srb*, the native name for Servia, without supplying some vowel sound. Syllabic alphabets are such as have signs for all the syllables composing the language, and for the syllables only. Such is the Cherokee alphabet, which has eighty-five signs, or characters, for its elementary syllables, and which has been spoken of in the article *Indian Languages*, appendix to volume vi.

Syllabub; a kind of drink, ordinarily made of white wine and sugar, into which some new milk is thrown by a syringe.

Syllogism (συλλογισμος), in logic; an argument or form of reasoning, consisting of three propositions, having this property, that the conclusion necessarily follows from the two premises, so that if the first and second propositions be granted, the conclusion must be also granted. If the premises be only probable, or contingent, the syllogism is said to be *dialectical;* if they be certain, *apodictical;* if false, under an appearance of truth, *sophistical*, or *paralogistical*. As often as the mind observes any two notions to agree with a third, which is done in two propositions, it immediately concludes that they agree with each other; or, if it finds that one of them agrees, and the other disagrees, which is likewise done in two propositions, it immediately pronounces that they disagree with each other; and such is a syllogism. Of the three propositions of which a syllogism consists, the first is, by way of eminence, called the *proposition*, as being the basis of the argument; the second, the *assumption*, as being assumed to assist in inferring the third; and both, the *premises*, as being antecedent to it. The first is called the *major*, the second the *minor*, the third the *conclusion*. As the conclusion is the principal part, it hence arises that though the proposition and assumption have each its subject and attribute, yet the subject and attribute of a syllogism are properly understood of the conclusion. In the constitution of a syllogism we may consider the matter and the form of it. The matter is three propositions made up of three ideas, or terms, variously joined, and called the *major*, *minor* and *middle*. The following proposition, for instance, forms a syllogism:—Every animal lives; man is an animal; therefore man lives. The predicate of the conclusion is called the *major term*, because it is generally of larger extent than the *minor term*, or subject. The major and minor terms are called the *extremes*. The *middle term*, or *medium*, is the third idea, so disposed in two propositions as to show the connexion between the major and the minor term in the conclusion; whence the middle term is sometimes called the *argument*. The proposition which contains the predicate of the conclusion, connected with the middle term, is usually called the *major proposition:* that which connects the middle term with the subject of the conclusion is called the *minor proposition*. In a regular syllogism, the major proposition is placed first, the minor second, and the conclusion last. Syllogisms are distributed, with regard to the question to be proved, into universal affirmative, universal negative, particular affirmative and particular negative, and with respect to their nature and composition, into single and compound. Single syllogisms may be divided into simple, complex and conjunctive. Simple, or categorical syllogisms, are made up of three plain, single or categorical propositions, in which the middle term is evidently and regularly joined with one part of the question in the major, and with the other in the minor, whence follows a plain, single conclusion. A complex syllogism is that in which the whole middle term is not connected with the whole subject, or the whole predicate, in two distinct propositions, but is intermingled, and compared with them by parts, thus:—The sun is a senseless being; the Persians worshipped the sun; therefore the Persians worshipped a senseless being. Conjunctive syllogisms are those in which one of the premises—viz. the major—has distinct parts joined by a conjunction or some such particle of speech. Compound syllogisms are made up of two or more single ones, and may be resolved into them. The chief kinds are the *epichirema*, *dilemma*, *prosyllogismus* and *sorites*. A syllogism in which one of the premises is suppressed, but so as to be understood, is called an *enthymeme*.

SYLVESTER II, whose true name was Gerbert, was born of an obscure family in Auvergne, and at an early age entered the monastery of St. Gerard, in Aurillac. After laying a foundation for all the sciences cultivated in that age, he travelled into Spain to hear the Arabian doctors, and, at length, became so distinguished, that he was appointed by Hugh Capet preceptor to his son Robert. Otho III, emperor, who had also been his pupil, conferred upon him the archbishopric of Ravenna; and on the death of Gregory V, in 999, procured his election to the papacy, when he took the name of Sylvester. He acted with great vigor in this capacity, and maintained the power of the church with a high hand. He was also a great promoter of learning, and a proficient in various branches of science himself. He expended large sums in the collection of books; composed a number of works, particularly on arithmetic and geometry; and with his own hands made a clock, a globe, and an astrolabe. A number of his letters, on various subjects, were printed at Paris in 1611; but the most complete collection has been given by Du Chesne. He died in 1003.

SYLVIUS, Æneas. (See *Piccolomini.*)

SYMBOL (in Greek συμβολον; Latin, *symbolum*; from συμβυλλειν, to suspect, divine, and compare); a word of various meaning even with the ancients, who used it to denote a sign, a mark, watchword, signal, token, seal-ring, &c. Its meaning is still more various in modern times. *Symbol* is generally used as synonymous with *emblem*. It is not confined, however, to visible figures, but embraces every representation of an idea by an image, whether the latter is presented immediately to the senses, or merely brought before the mind by words. Men, in the infancy of society, were incapable of abstract thought, and could convey truths only by means of sensible images. In fact, man at all times has a strong propensity to clothe thoughts and feelings in images, to make them more striking and living; and, in the early periods of our race, when man lived in intimate communion with nature, he readily found, in natural objects, forms and images for the expression of moral truths; and even his conceptions of the Deity were derived directly from natural objects. Every thing in nature was an image and sign of the Deity; every natural phenomenon was regarded as divine. The priests, who had advanced in intelligence beyond the great body of the people, when they attempted to communicate such ideas of the Deity as the people did not find directly in nature, or to explain the laws of nature, were obliged to use images to make themselves understood. These images were in part verbal, in part addressed immediately to the senses. But, however strikingly a symbol may embody an idea, it is always attended with some uncertainty and liability to various interpretations. The attribute (q. v.) differs from the symbol in this circumstance, that the former is only a peculiar sign, added to an image for the sake of more perfect representation; the latter is independent and intelligible of itself: all attributes are symbols, but all symbols are not attributes. Though attributes are used to express not only moral conceptions, but also actions and historical facts, they still remain a kind of symbols, expressive of the spirit and essential character of the action or fact. Allegory (q. v.) always has an artificial, labored character: the symbol ought to be a natural expression of an idea. It is not necessary that the symbol should comply with the rules of art, and be beautiful in itself; the chief thing required is, that it should actually designate ideas in a lively manner. Thus the forms in Indian and other mythologies, often strange, and sometimes even disgusting, are not less genuine symbols, than the harmonious and beautiful forms of the Greeks. In a narrower sense, however, the images and conceptions of Greek mythology and art have been called, in modern times, *symbolical*, and contradistinguished to the allegorical. In this case, *symbolical* means chiefly the perfect embodying of the spiritual in a form entirely appropriate to the idea. The symbol relates particularly to the highest ideas—those of a religious character. The idea may be more or less perfectly apprehended, so that the same symbol may convey very different notions to different persons. Thus we find the same symbols which were presented to the people in the rude forms of ancient heathenism, and which the people but imperfectly understood, preserved also in the most elevated systems of philosophical religion, with their meaning fully unveiled. The initiated fully understood the symbol; the people, who had perhaps lost its original signification, required to have it explained to them. The more a religion is confined within the limits of the visible world, the more immediately its doctrines are derived from the phenomena of nature; the richer is it in symbols; whilst a revealed religion, whose doctrines are addressed more directly to the intellect, and contain ideas beyond the circle of the phenomena of nature, will become necessarily poorer in symbols, and richer in distinct notions. Paganism, therefore, abounds so much more in symbols than Judaism and Christianity. Symbols are also the signs through which the Deity is believed to reveal his will, or unveil futurity, or manifest his power. Such signs may be particular displays of the powers of nature, or voices, prophetic words, and oracles. The word *symbol* further received a particular application in the Greek mysteries, which clothed their mysterious doctrines in symbols and maxims, not only in order to veil them from the uninitiated, but also to present them to the initiated in the most expressive images. And, as the initiated recognised each other by signs and words, which were peculiar to the mysteries, and presupposed the knowledge of their meaning, such signs were called also *symbols*. But as the use of such signs recalled also the sacred obligation entered into at the time of initiation, particularly that of silence, and of living in a manner corresponding to the doctrines of the mysteries, therefore a sacred obligation, a vow, made to God, a fellow man, or a society, was called συμβολον, which term is also applied to the oath of soldiers, and to the watchword or sign by which those on the same side recognised each other, or communicated something to one another in a way unintelligible to the enemy. *Symbol* also signified a token, by which those who had given and received hospitable entertainment recognised each other at a future time, or which was given as a pledge of any contract or obligation.

Christian Symbols. The various meanings of the word *symbol*, all originating from one root, existed already, as we have seen, before the Christian era, and naturally found their application in the Christian church. There was already a sacred meaning connected with the word; and opposed to paganism as the first Christians were, and averse to receive any thing of it into their church, yet a word of this character would not appear objectionable to them. Besides, the anxious fear of every thing which savored of paganism, had already considerably diminished when the word *symbol* became general among Christians. Christian teachers may even have felt themselves called upon to show that they also had their symbols, when the persons initiated into the heathen mysteries often boldly opposed their doctrines to those of the Christians, and pointed to their mysterious symbols as means of distinction and sanctification. The Christians also treated their symbolic doctrines and rites as sanctifying rites, constituting signs of recognition and means of union among the members of their community, and separating them from the whole of paganism and Judaism. They therefore called the sacraments *symbols*, as visible signs of an invisible salvation; and not only signs, but, properly speaking, pledges of this salvation, and of the divine promises and grace. In this sense, baptism and the Lord's supper, as the proper sacraments, are called *symbols*, yet always with a sanctifying epithet; so also are the water of the fount, and the bread and wine. Symbols, further, are all Christian rites, all exercises of worship, as far as they are considered necessary expressions of the ideas designated by them. The sacraments and rites are also symbols in the sense of signs of distinction; because every one who partakes in them, shows thereby that he belongs to the Christian community; and even the mere sight of the sacraments was originally prohibited to the unbaptized. These symbols must be distinguished from the *types*, so called, viz. the persons, rites, &c., of the Old Testament, which prefigured what is told in the New. Certain signs of the Christian church are symbols in the proper sense of the word; as the sign of the cross, and the Virgin with the Child. Besides these, there are the *symbolic attributes*, by which artists distinguish the various evangelists, saints, apostles, &c., in their representations; e. g. to Matthew is always added the man, to Mark the lion, to Luke the ox, to John the eagle—the four creatures which appeared in the vision of Ezekiel. The name of *symbols* is also given, in the Christian church, to those doctrines, expressed in short formulæ, which are acknowledged by all Christians; therefore to the confessions, so called, which contain the essential points of the belief of the various sects. The Holy Scriptures remain the true foundation of faith and the rule of the faithful; but the symbolic confessions are intended to give a short sketch of the opinions of all the members of each religious sect respecting the truths to be acknowledged as the essential doctrines of the

Bible, and to prevent arbitrary interpretations of it. Symbols, in this sense, are not put upon an equal footing with the Bible; but because, according to the opinions of the sect, they contain the sense of the Bible, every one must profess his belief in them, who wishes to be acknowledged as a member of the particular denomination. (For the symbolic books, see *Creeds*.)

Symbolical Books. (See *Creeds*.)

Symbolics; the science which treats of the symbols of the various religions, particularly of the ancient religions, founded on the manifestations of the Deity in the phenomena of nature, or whose doctrines are given in symbols taken from natural objects. (See the articles *Symbol*, and *Creutzer*, *George Frederic*.)

Sympathetic Cures; pretended or real cures, not by means of physic, but of the secret powers of bodies, which do not necessarily come into direct contact with the patient, but have a mysterious influence on his condition. The operation is attributed to a certain sympathy of the sufferer with other individuals, or with spirits, stars, animals, plants, stones, &c. Full belief in the power of such means of cure has a very great effect in such diseases as are chiefly seated in the soul, or in the nervous system, e. g. diseases of the mind, epilepsies, &c.

Sympathetic Inks. (See *Ink*.)

Sympathy (from συν, together, and παθω, I suffer), in physiology, is that quality of the animal organization, by which, through the increased or diminished activity of one organ, that of others is also increased or diminished. The idea of an organized system—the union of many parts in one whole, in which all these parts correspond to each other—includes the idea of a mutual operation, of which sympathy is a part. The medium between the organ from which the action proceeds and that to which it extends, has been sometimes supposed to be the nervous system, sometimes the vascular or the cellular system, or the juices; and it cannot be denied, that, in some sympathetic phenomena, the nerves and the vessels appear to be the media; but there are objections to considering them as the cause of sympathy in general, for experience teaches, that sympathy takes place also between such organs as have no discoverable connexion by nerves or vessels. The phenomenon of sympathy appears even in the healthy body; e. g. a strong light, thrown upon the eye, sometimes produces sneezing (q. v.); tickling causes laughing; and some physiologists have even called the change of voice at the age of puberty, and the increased secretions of the liver, the salivary glands, the pancreas, and the coats of the stomach at the time of digestion, a sympathetic action. But the effect of sympathy is much more often observed in diseases. There is hardly one in which some phenomena are not to be explained by sympathy. *Sympathy* is further used to express the influence of the state of one individual upon another, e. g. the tickling in the throat, caused by the cough of another person; or the yawning produced by seeing another yawn; or the sorrow produced by witnessing his grief. The effects of animal magnetism (q. v.) are also ascribed to sympathy, and those which the sight of some animals is said to have upon some men.

Symphony (from the Greek συμφωνία; in Italian, *sinfonia*). The word *symphony*, in the ancient music, signifies the union of sounds which forms a concert. When the whole concert was in *unison*, it was called a *symphony*; but when one half of the performers were in the octave, or double octave, of the other half, it was called *antiphony*. At present the word *symphony* is often applied by the French and English to overtures, and other instrumental compositions, consisting of a variety of movements, and designed for a full band. The introductory, intermediary, and concluding instrumental passages in vocal compositions are also called *symphonies*. But the Germans use *symphony* as contradistinguished to *overture*, which, according to its true meaning, ought to be dependent upon the piece to which it forms the introduction. It should contain the chief ideas of the piece, or at least indicate the fundamental disposition of the whole, on account of which, most composers write their overtures after they have finished the pieces for which they are intended. The symphony, on the other hand, is an independent piece, and is therefore capable of a fuller developement of musical ideas. Formerly the overture was used for the symphony. Sulzer, in his General Theory of the Fine Arts, says, "The difficulty of executing an overture well, and the still greater difficulty of composing a good one, has given rise to the easier form of the symphony, which consisted originally of one or more fugue pieces, alternating with dancing music of various kinds, and was generally called *partie*. The overture, indeed, maintained itself still at the beginning of great pieces of church music and of operas, and the *parties* were used only in chamber music; but people became tired of dancing music, unaccompanied by dancing, and were at last satisfied with two allegros, alternating with a slow passage. This species of composition was called *symphony*, and used both in chamber music and before operas and pieces of church music. The instruments necessary to a symphony are the violin, tenor violin, and bass instruments—a number of each: flutes, horns, hautboys, may be added. Among the old composers of symphonies, Benda, Bocherini, Dittersdorf, Pleyl, &c., were famous, but are now mostly forgotten. The greatest modern masters in this kind of composition are Haydn, Mozart, Beethoven.

Symplegades (Συμπληγαδες, from συμπληττω, to dash together); small rocky islands at the mouth of the Thracian Bosphorus, which were fabled to strike together, and destroy ships, as they passed. Juno conducted the Argonauts safely through them, and Orpheus rendered them immovable by his lyre. They were also called *Cyanean* (κυανεος, azure) islands or rocks, from their blue appearance.

Symposia; the feasts of the ancient Greeks. (See *Feasts of the Ancients.*)

Symposiarch; he who provided all things necessary for a συμκοσιον. (See *Feasts of the Ancients.*)

Symptoms, in medicine; the phenomena of diseases, from which we infer the existence and the nature of the disease. Symptoms have their seat in the functions which are affected by the disease so as to be raised above their usual activity, or depressed below it, or even to become changed in the nature of their action. The organs themselves are often changed in their appearance, structure, size, &c. Symptoms may be perceptible by the patient alone (e. g. pain, and all change of sensations), or by the physician also (e. g. all diseased movements). The more a function or an organic system is extended through the body, the more frequently will it be the seat of morbid phenomena: the nervous, the vascular and the cutaneous systems, for instance, are affected in most diseases; hence also irritability, the power of nutrition, &c., which extend through the whole organization, are so easily affected by diseases, and thus afford symptoms. If the latter are in the organs originally affected, they are called *idiopathic*; but if they are caused by sympathy (q. v.) in other and distant parts, they are called *consensual* or *sympathetic*. The temperament, age, sex, mode of living, &c., of the patient, produce a considerable variety in the symptoms of every disease. They are sometimes further divided into symptoms of disease, symptoms of causes, and symptoms of symptoms. The first are the essential indications of the disease: they may be idiopathic or consensual. The symptoms of the cause are such as are accidentally produced by the cause of the disease; e. g. when a cold, which produces an inflammation of the lungs, produces at the same time rheumatic pains, coughs, &c., the latter, being of secondary importance, are considered mere symptoms of the cause, which has produced the chief disease—the inflammation. Symptoms of symptoms may be illustrated by the case of vomiting, which, being occasioned by a disordered state of the stomach, may itself produce great pain, spitting blood, &c., which would then be symptoms of a symptom. That symptom which contributes chiefly to indicate a disease, is called the *pathognomic* symptom.

Synagogue (from the Greek συναγωγη, an assembly); the place in which the Jews assemble on the Sabbath (Saturday) to offer prayers, and listen to the reading of the Old Testament and to religious instruction. They were first introduced after the Babylonish captivity, and were originally applied to purposes of instruction; but after the destruction of the temple by the Romans, religious services were performed in them. Each synagogue has a rabbi or president, several elders, a reader, door-keeper, and a receiver of alms. The liturgy of the modern Jews, of which there are copies in Hebrew and the modern languages, is not very different from the Christian liturgies, which were formed in imitation of it. It comprises prayers for the Sabbath, and for the fast and festival days. The date of its composition is uncertain. The nineteen daily prayers are recited every day, either in public at the synagogue, or wherever the person may happen to be. In the time of our Savior, any person could conduct the services; but this duty is now usually discharged by a rabbi. The prayers are repeated aloud by the whole assembly.

Synchronism (from συν, with, together, and χρονος, time) is the placing together the accounts of contemporaneous persons or events. To this method is opposed the *ethnographic* (q. v.), which connects all belonging to the same nation. Synchronistic tables are very useful.

Syncope, in physiology and medicine; fainting; a considerable diminution or complete interruption of the motion of the heart and of the function of respiration, accompanied by a suspension of action in the brain, and consequent temporary loss of sensation, volition, and the other faculties, of which the brain is the organ. It takes place from a variety of causes, some of an exciting, others of a depressing nature. It is familiar to hypochondriac and hysteric persons, and may be brought on in all those who have much mobility of nerves by any sudden or violent emotion, or even strong sensation. It is a very usual consequence of violent pain, such as that which accompanies a surgical operation. Women are more prone to fainting than men, in consequence of greater susceptibility to impressions made on the nervous system. But we find, even among men, frequent peculiarities of constitution, which, notwithstanding general strength of frame, dispose them to faint, from causes which appear slight, such as certain odors, the sight of blood, a wound or sore, the presence of a cat, mouse or spider, or other objects for which a person has conceived an unaccountable aversion. Sometimes the cause is to be found in disturbed digestion, worms, and other irritations acting upon the nerves of the stomach or intestines. Other causes act more directly on the circulation, as the sudden depletion of the blood-vessels by hæmorrhage, or by large evacuations of any kind, such as purging, vomiting, or even sweating. The removal of fluids which have collected in any part of the body, such as the hydropic water in ascites, or the matter of a large abscess, is often followed by fainting. Causes which suddenly diminish the supply of blood to the head, tend peculiarly to produce it in those who are disposed to it. This sometimes happens from rising suddenly from the horizontal position, and stretching out the arms towards an object placed above the head, as in reaching a book from a high shelf in a library. Fainting sometimes marks the invasion of acute diseases, and is sometimes a symptom of some mechanical obstruction to the circulation from organic affections of the heart or of the large vessels in its vicinity. The recovery of the patient from the actual fit, is, in general, easily effected, by merely placing him in a horizontal position, dashing cold water on the face and hands, or chafing the temples with stimulant ammoniacal liquids; which may also be held to the nostrils when the breathing is not entirely suspended. If the fit is of long continuance, it is proper to employ the same means as are used for the recovery of drowned persons. Frequent fainting, especially if it be found to observe certain periods, or to occur more particularly upon waking in the morning, is a mode in which epilepsy very often commences; and when this is suspected, no time should be lost in applying the proper remedies.

Syncretism; the attempt to reconcile discordant views, particularly religious views. There are various derivations of the word. Plutarch (*De Fraterno Amore*) derives it from the name of the island of Crete; the tribes of which, he says, endeavored to protect themselves by compacts among themselves against internal feuds and attacks from without. The Protestant parties were early called upon to unite, like the Cretans, against the Roman see; for instance, by professor Dav. Pareus, of Heidelberg, towards the end of the sixteenth and the beginning of the seventeenth century. At a later period, the word received another meaning, and was derived—probably more correctly—from the Greek συν and κεραννυμι (to mix). In the sixteenth century, when the study of ancient literature was revived in Italy, and Plato came in repute, in addition to the general favorite Aristotle, some scholars, as Joh. Francis Pico (see *Mirandola*), Bessarion and others, who honored Plato much, but were unwilling to give up Aristotle entirely, were called *syncretists*. In the same way the term *syncretism* was applied to the union of the academicians and peripatetics. It was particularly used of the Alexandrian school. This word came into general use in Germany after the beginning of the seventeenth century, when George Calixtus (q. v.), professor of theology at Helmstädt, having acquired liberal opinions far in advance of his age, attempted a union of the various religious parties. *Syncretist* then became a word of great odium.—See Walch's *Introduction to the Controversies of the Lutheran Church* (in German).

Syndic, in government and commerce; an officer, in various countries, intrusted with the affairs of a city, or other community, company of art or trade, &c., who calls meetings, makes representations and solicitations to the magistracy, &c.—*Syndic* is also a person appointed to act in some particular affair, in which he has a common interest with his constituents, as when he is one among several creditors of the same debtor.

Synecdoche, in rhetoric; a figure in which the whole of a thing is put for a part of it only, or a part for a whole. This figure is of very considerable latitude, and is used, 1. when the genus is put for the species; 2. when the species is put for the genus; 3. when the essential whole is put for one of its parts; 4. when the matter or form is put for the whole being; 5. the whole for a part; or, lastly, the part for the whole.

Synedrium. (See *Sanhedrin.*)

Synocha, and **Synochus.** (See *Fever.*)

Synod; an ecclesiastical assembly convened to consult on church affairs. (See *Council.*) A synod may be composed of a bishop and the clergy of his diocese (*synodus diœcesalis*, diocesan synod), or of an archbishop and the bishops of his province (*synodus provincialis*), or of the whole clergy of a state under a papal legate (*synodus universalis*, or *nationalis*). Synods, in the Presbyterian church, are composed of several adjacent presbyteries. (See *Presbyterians*, and *Reformed Church.*) The convocations of the English clergy are provincial synods; but they have virtually expired. (See *Convocation*, and *England, Church of.*) The holy synod at Petersburg is the supreme ecclesiastical council of the Greek church in Russia. (See *Greek Church*, and *Russia.*) The superintendents and inspectors, with their parochial clergy, also form synods in Lutheran countries, but rather for purposes of advice and mutual encouragement, than of exercising any controlling authority.

Synonymes, or words having the same signification, strictly speaking, do not exist in any language. Different dialects of the same language may indeed have different words of the same meaning; but as soon as these pass from the dialect into the literary or generally adopted language, they either take the place of some other word of the same signification, or receive themselves a new shade of meaning, and are then added to the others. It is true that the similarity in the meaning of words is often so great that much discrimination is required to ascertain the different shade of each word; and an abundance of such synonymes proves great acuteness in a nation. The languages of the East, so rich in metaphors and imagery, manifest the vivid imagination of its inhabitants, while most of the languages of Western Europe, by their numerous synonymes, demonstrate the acuteness of those who speak them. The Arabian language, equally distinguished for the copiousness of its imagery and the number of its synonymes, strikingly exhibits the wit, imagination and discrimination of this people. The more a nation advances in civilization, the more it classifies ideas, unites the various species under the genus, and the more synonymes are required, as they are words which, with a general resemblance, have characteristic differences, as *cruelty* and *atrocity*, *riches* and *treasures*. Synonymes form an important subject of philological study, and one which requires much knowledge of the etymology and history of the language investigated. The want of works in this branch of study was early felt. Towards the end of the second century, Jul. Pollux wrote his *Onomasticon*—a work of some merit, on Greek synonymes. Vaugelas, Girard, Beauzée and Roubaud have written on French synonymes; Blair, Dav. Booth and Crabb on English; Stosch, Heynatz, Eberhard (continued by Maass and Gruber), on German; and doctor Ramshorn (Altenburg, 1828) has lately republished the Latin synonymes of Dumesnil (Ernesti's edition).

Syntax (*συνταξις*, construction); that part of grammar which treats of the manner of connecting words into regular sentences. A word expresses a single notion, but by itself is little more than an articulate sound, which, like the cry of animals, intimates a wish or a feeling. A succession of such sounds, properly arranged and connected, becomes language. The art of constructing sentences is, therefore, not less important than the power of speech; it is, indeed, the intellectual part of language, and a characteristic of reason. One class of words—the particles, or the accessory parts of speech, as they are sometimes called—serve merely to indicate the relations in which the principal or necessary parts (noun and verb) stand towards each other, or rather, like the sinews of the human body, to bind together what would otherwise be a heap of disconnected and useless limbs. In every language, there is some fundamental principle, which pervades and regulates its whole construction, although it may occasionally admit of particular variations. Passion, or the excited imagination, for instance, will often violate, as the grammarians call it, the general laws of construction. In some languages, the principle of juxtaposition prevails, and little diversity of arrangement is possible. The relations of the subject, the action and the object are indicated by their respective positions. In the transpositive languages, these relations are indicated by the changes in the forms of the words; and the modes of arrangement are various. Still, in the structure and disposition of sentences and parts of sentences, the logical relations of the thoughts must regulate the construction, even where it appears to be most arbitrary. (See *Language*, and *Philology*.)

Synthesis (literally, *connexion, union*) is a term used generally as contradistinguished to *analysis*. Combining and separating are the chief operations by which we acquire knowledge: the former, however, is first in time. When an object is presented to our vision, we form the idea of a whole out of its parts; but the intellect, in forming general notions, separates the given subject (analysis), and then unites (synthesis) what is common to several things, excluding what is peculiar to each. A synthetic or progressive proof or demonstration is one which proceeds from the reasons to the consequences, or from the general to the special: an analytical or regressive one ascends from the consequences to the reasons. This also explains the meaning of the expression *synthetic* and *analytic* method: the former is that process in science, which begins with the principles, and from them deduces a particular conclusion, as is strictly done in mathematics; yet mathematicians themselves give the name of *synthesis* to that part of their science which contains the proofs of the theorems already laid down; *analysis* (q. v.) they call that part which seeks to form theorems.

Synusians. (See *Apollinarians*.)

Syphax, king of the Massæsylians in Africa, allied himself with the Romans in the second Punic war, but, being repeatedly defeated by Masinissa (q. v.), was prevented from joining Scipio in Spain. But this state of things was soon changed. Masinissa was deprived of his crown by a usurper; and Syphax was thus enabled not only to return into his dominions, but, deserting the alliance with the Romans, and joining the Carthaginians, to conquer the kingdom of his rival. Syphax, to whom Hasdrubal had given in marriage his daughter Sophonisba (q. v.), who had been previously betrothed to Masinissa, declared in favor of Carthage, on the appearance of Scipio and Masinissa with an army in Africa, and raised a large body of troops in her cause, but was defeated and made prisoner. Livy says that death spared him the disgrace of being carried into Rome in triumph by Scipio; but Polybius, the friend of Scipio, states that he formed a part of the triumphal procession of the conqueror.

Syphilis (from the Greek σιφλος, feeble); the name now most frequently used for the venereal disease, which is thus called in a very fine poem, written in Latin hexameters, by the Italian Fracastorio (first printed in Venice, 1530, 4to.). The history of this disease is one of the most difficult parts of the history of medicine. It is uncertain whether that violent and truly epidemic disorder of the skin, which appeared in the last ten years of the fifteenth century, was really what we now call syphilis, or not rather a variety of the leprosy, which soon after entirely disappeared. Towards the end of the fifteenth, and at the beginning of the sixteenth century, a disease appeared in Europe, till then unknown, and which, by its rapid extension, its horrible consequences, its great contagiousness, the inefficacy of all the remedies employed against it, perplexed the physicians, and excited a general horror. Respecting its origin, nothing certain is known. The physicians of that time were, generally speaking, too ignorant to investigate the origin of a disease which they were but rarely able to cure. Until lately, it was pretty generally believed that this malady was carried by the vessels of Columbus from America to Europe; but the most accurate examination of this opinion shows its incorrectness. The first author who expresses this opinion was a physician of Nuremberg (Germany), of the name of Leonhard Schmauss, in 1518: he founded his opinion upon the fact that the Guaja wood, which had been introduced from America in the mean time, had become known as a good remedy for the disease; for, said he, nature always provides an antidote in the vicinity of a poison. The principal support which his opinion received was from the testimony of the son of Columbus, and his successor Oviedo; but the first speaks only of a disease like scald head, said to predominate in St. Domingo; and the other, a tyrant, like most of the Spaniards in America at that period, delights in representing his nation as the favorite people of God, and the Americans as cursed. A careful inquiry shows only that the crew of Columbus brought a contagious disease with them, which destroyed the greater part of their number, and communicated itself to those who had intercourse with them. This is easily explained by the imperfect care taken of the health of such a crew, and the uncommon hardships of such a voyage in those times. At all events, their complaint was not the venereal disease, as this broke out almost at the same moment, in the summer of 1493, in the south of France, in Lombardy, and in the north of Germany. Now, the vessels of Columbus did not arrive till April at Seville; and the disease could not possibly have spread so far from this place within two months. Others have sought for the origin of this disease in the expulsion of the Marranos (secret Jews) from Spain, between 1485 and 1493. Many thousands of these unhappy persons died of the plague on their passage by sea to Italy, Greece, &c. Thousands of others suffered by the leprosy; and, without doubt, they carried misery and sickness with them wherever they went. But that this particular form of disease existed among them cannot be proved; and, moreover, though Germany was not visited by these emigrants, the syphilis showed itself simultaneously, in 1493, in Halle, Brunswick, Mecklenburg, &c. As to the opinion that the venereal disease had always existed in some form, it only amounts to a play upon words, as a mere diseased state of the genitals is far from amounting to syphilis, especially if we consider the horrid consequences which that disease produced at the time referred to. The most probable conclusion is, that the venereal disease was produced by an epidemic tendency existing at that time, which gave this new form to the leprosy then so widely spread. The ancient writers, for many years, described syphilis more as a terrible disease of the skin and bones in general than as a mere affection of particular parts; more as a plague than as a disorder of particular individuals. A new form of disease could be developed the more readily, as the political relations of that time brought the nations very much into connexion with each other: Spaniards, French, Germans, traversed Italy, and all these, together with the Italians, spread through Germany. The disease brought by the sailors from America, akin to scurvy, may also have contributed its part. It is certain that the disease was then far more terrible than now. It made the patient an object of horror to his friends, and almost inevitably reduced him to despair, as no physician was able to aid him, and the remedies used were almost as shocking as the disease. Since contagion, at that period, took place much easier than now, and houses of ill fame, which contributed greatly to spread the disease, were found every where, the disorder had by no means the same character of disgrace connected with it as at present. On the contrary, Ulrich von Hutten, who suffered from it for years, and at length recovered his health by the use of guaiacum, and the strength of his constitution, always enjoyed public esteem, and even dedicated his work on the disease to the first spiritual prince of Germany, without indecorum or offence. Like other diseases, it gradually diminished in virulence, particularly after Paracelsus had found in mercury, and Swediauer in acids, the most effective remedies against it; and great suffering does not arise from it at present except in consequence of neglect. Yet it is still a formidable disease, as it injures more or less the general health, and lays the foundation for other diseases of a very obstinate character—gout, rheumatism, complaints in the bladder, &c.

Syphon. (See *Siphon.*)

Syracuse (now *Siragosa*, with a population of 13,800 souls), anciently the chief city of Sicily, and one of the most magnificent cities in the world, with 300,000 inhabitants, is now greatly reduced, but still has an excellent harbor, capable of receiving vessels of the greatest burden, and of containing a numerous fleet. The ancient city was of a triangular form, twenty-two miles in circuit, and consisted of four parts, surrounded by distinct walls, namely, Ortygia, between the two harbors; Acradina, extending along the seaside; Tyche, so called from its containing a temple of Fortune (Τυχη), an inland division; and Neapolis, forming the western part. At present, the only part inhabited is the south-east corner, containing Ortygia and a part of Acradina. Siragosa is insulated, walled, and entered by drawbridges. The streets are regular, but narrow, and the houses tolerably built. It contains an hospital, and a number of churches and convents. The cathedral is the ancient temple of Minerva. The papyrus (q. v.) is found in the neighborhood. Syracuse was founded by a colony of Corinthians, B. C. 736. It became the largest and most wealthy city in Sicily, and, according to Thucydides, possessed a greater population than Athens, or any other Grecian city. It was at one time governed as a republic, at another by Gelon, Hiero, Dionysius (see these articles, and *Timoleon*), and other rulers.

It was besieged, B. C. 414, by the Athenians; and again, B. C. 215, by the Romans, under Marcellus and Appius. It was defended near three years by the genius and enterprise of Archimedes (q. v.), but at last fell into the hands of the Romans (B. C. 212), and continued in their possession till the downfall of their empire. Here are remains of the ancient amphitheatre, of an oval form, 300 feet in length and 200 in breadth: the arena, seats, and passages of communication, were cut out of the rock. The catacombs (q. v.) still exist, and form a remarkable feature of Syracuse. They are only seven or eight feet high; but their extent is such that they form a kind of subterranean city, with a number of narrow streets, some of which are said to be a mile long, and contain tombs and sepulchral chambers. The speaking grotto, or, as it was called by the ancients, the *Ear of Dionysius*, is a cave 170 feet long, 60 high, and from 20 to 35 wide, with so strong an echo, that the slightest noise is overheard in the small chamber near the entrance, in which Dionysius is said to have listened to the conversation of his prisoners. The fountain of Arethusa (q. v.), still a striking object, from its discharge of waters, now serves merely as a resort for washerwomen. Theocritus and Archimedes were natives of Syracuse; and the Romans found here an immense number of works of art, which they carried off to Italy. (See *Sicily*.)

SYRENS. (See *Sirens*.)

SYRIA; a country of Western Asia, bordering on the Mediterranean sea, and forming a part of the Ottoman empire. (q. v.) It is called by the Arabs *Al-Scham*, or *Bar el Cham*; by the Turks and Persians, *Sur*, or *Suristan*; and in the Scriptures, *Aram*. It has Asia Minor, or Natolia, to the north, the Euphrates and the great Arabian desert on the east, Arabia Petræa to the south, and the Mediterranean on the west. It is divided into four pachalics, Aleppo, Tripoli, Damascus and Acre. Square miles, about 50,000; population, 2,400,000. The chief towns are Aleppo, Damascus, Hamah, Hems, Jerusalem, Antioch; the seaports, Alexandretta, Tripoli, Bairout, Saida (Sidon), Sur (Tyre), Acre and Jaffa. The leading features in the physical aspect of Syria consist of the great mountainous chains of Lebanon, or Libanus, and Anti-Libanus, extending from north to south, and the great desert lying on the south-east and east. The valleys are of great fertility, and yield abundance of grain, vines, mulberries, tobacco, olives, excellent fruits, as oranges, figs, pistachios, &c. The climate, in the inhabited parts, is exceedingly fine. The commerce has never been so great in modern as in ancient times, and has of late diminished. An extensive land communication was formerly carried on from Syria with Arabia, Persia, and the interior of Asia; but it has been interrupted by the disturbed state of the countries. Syria is inhabited by various descriptions of people, but Turks and Greeks form the basis of the population in the cities. The only tribes that can be considered as peculiar to Syria are the tenants of the heights of Lebanon. The most remarkable of these are the Druses and Maronites. (See the articles.) The general language is Arabic: the soldiers and officers of government speak Turkish. Of the old Syriac no traces exist. No country was more celebrated in antiquity than Syria. In the south-west was the land of promise, the country of the Israelites, and the cradle of Christianity. (See *Palestine*.) Phœnicia (q. v.), particularly its cities of Tyre and Sidon, were famous for commerce. Damascus was long the capital of a powerful kingdom, and Antioch was once a royal residence, and accounted the third city in the world in wealth and population. Balbec and Palmyra still exhibit splendid ruins of their ancient greatness. (See the articles.) Here have the Assyrians, Jews, Greeks, Parthians, Romans, Saracens, the crusaders, and the Turks, struggled at different periods for possession. Ninus, Semiramis, Sesostris, Alexander, Pompey, Antony, Cæsar, Titus, Aurelian, &c.; at a later period, Godfrey of Bouillon, Richard Cœur de Lion, Saladin, &c. (see *Crusades*); and, still more recently, Napoleon and Mohammed Ali, have in turn acted a part on the plains of Syria. Ignorance, superstition and barbarism now cover the land, and no traces of its civilization remain but ruins. (See *Turkey*.)

SYRIAN LANGUAGE. (See *Semitic Languages*.)

SYRIAN OR CHALDÆAN CHRISTIANS is the name which the Nestorians give to themselves, because they use the ancient Syrian in their religious service: they also possess the New Testament in this language. This Christian sect was formed in the fifth century, by the union of the adherents of Nestorius (see *Heretic*), who had been excommunicated, in 431, by the synod of Ephesus, on account of refusing to call Mary the mother of God, and to give up the doctrine of the existence of two natures in Christ. Though this doctrine of two natures in Christ was soon after received into the creed of the orthodox church, and monophysitism (see *Monophysites*) was declared heretical, yet the Nestorians, who would only call the virgin Mary the mother of Christ, remained excommunicated, and, towards the end of the fifth century, established their ecclesiastical constitution under the protection of the king of Persia, to whom they had fled. The other Christians in Persia joined them in 499, and they gained many adherents in Eastern Asia, where the Christians of St. Thomas (q. v.) also joined them. In the eleventh century, they converted the Tartar tribe, whose Christian ruler is known in history under the name of *Prester John.* His people remained attached to Christianity and the Nestorian faith, after having been reduced, in 1202, by Gengis Khan, under the dominion of the Mongols. Until the wars of Timour, in the fourteenth century, there existed, also, in Central and North-eastern Asia, Nestorian communities. The Nestorians are believed to have carried Christianity even to China, as has been concluded from a Christian document of the year 781, found in China; and the connexion of Lamaism with Christianity has also been explained by the influence of Nestorian missions. The chiefs of the Syrian Christians are hereditary patriarchs. The principal one among them resided, in the fifth century, in Babylon; at present, he resides at Elkesh, near Mosul, in Mesopotamia, and has the title *Catholicos.* Under him are five bishoprics. He, and another Nestorian patriarch at Diarbekir, in Syria, acknowledge, at present, the supremacy of the pope, and are, with their flocks, united Nestorians, who, like the united Greeks, have retained their old rites. They have only been obliged to renounce the marriage of the priests, and to adopt the seven sacraments. The doctrine and worship of the Nestorians agree perfectly with those of the orthodox Greek church, except that they are hostile to pictures in the churches, where they allow no image but that of the cross to be seen. The Syrian patriarch at Giulamork, in the high mountains of Acaria, and the bishops and dioceses under him, do not belong to the united Nestorians. The Syrian language is a Semitic dialect, and important for the study of Hebrew. The study of it was first scientifically pursued by Michaelis, the father, then by his son, in 1748, afterwards by the Swede Agrell, and, since that time, particularly by A. Theoph. Hoffmann at Jena (*Grammatica Syriaca*, Halle, 1827, 4to.).

Syrinx; a Naiad, daughter of the river Ladon, in Arcadia. Flying from the pursuit of Pan, she was arrested in her course by the waters of the Ladon, and, calling upon her sisters for aid, was changed by them into a reed. The wind sighing through it produced sweet sounds, which charmed the god, who made himself a pipe from the reed, and called it *syrinx.* The syrinx was composed of seven pieces of reed, of unequal length, joined together with wax, and was the favorite instrument of the Greek and Latin shepherds.

Syrtes; two large sand banks in the Mediterranean, on the coast of Africa, one of which was near Leptis, and the other near Carthage. The Syrtis Minor, or Lesser Syrtis, is in the south-east part of Tunis; and the Syrtis Major (now Sidra) in the eastern part of Tripoli.

Syrups are viscous liquids, in the composition of which are commonly put two parts of sugar to one of some liquid. Generally, water, charged with the remedial principles of plants, is used in the preparation of syrups. The process, varied according to the nature of the remedies employed, may be conducted with or without heat. These preparations are likewise simple or compound.

System (Greek, *συστημα*, a putting together); an assemblage of facts, or of principles and conclusions scientifically arranged, or disposed according to certain mutual relations, so as to form a complete whole. The object of science is to collect the fragmentary knowledge which we possess, on any subject, into a system, classifying natural objects into orders, genera and species, according to their peculiar properties, or distributing them according to their powers and reciprocal relations, and arranging maxims, rules, facts and theories into an organic, living body. (See *Method.*) *System* is, therefore, sometimes nearly synonymous with *classification*, and sometimes with *hypothesis*, or *theory*. Thus we speak of a *mythological system*, or a *chronological system*, in the historical sciences, of a *botanical system*, or a *mineralogical system*, in natural science, &c. So in astronomy the *solar* or *planetary system* signifies that collection of heavenly bodies which revolve around the sun as a common centre, and the *Copernican*, *Ptolemaic* or *Tychonic system*, the hypothesis by which each of those philosophers respectively explained their position and motions. The purpose of a system is to classify the individual subjects of our knowledge in such a way as to enable us readily to retain and employ them, and at the same time to illustrate each by showing its connexion with all; and although it may appear that a mere arrangement of facts already possessed, implies no addition to our former knowledge, yet it is, nevertheless, true that a simple and judicious classification may suggest new views and point out new relations of things. The constituent parts of a system are a fundamental principle, which serves as a basis for the whole, and a large collection of facts, from which the various laws are to be deduced, which themselves all flow together into the common principle.

System, in music. (See *Tone*.)

System of the Universe; a certain arrangement of the several parts of the universe, fixed stars, planets and comets, by which their appearances and motions are explained. We know little of the universe by actual inspection: its infinity escapes the grasp of our limited vision; but reasoning leads us to conclusions beyond the reach of sense. (See *Astronomy*.) We first become acquainted with our own globe, and with the other planets revolving with it round the sun, by observation; and from this little corner of the universe we draw our inferences as to the rest. In our own system, we see the sun forming a fixed centre, about which the earth and the other planets, with their moons, regularly revolve. Our earth we know to be the residence of organized, sensitive and thinking beings: observation teaches us that the other planets of the solar system resemble the earth in many respects; and we therefore conclude that they are the residences of sensitive and rational beings. Further observation makes it probable that the fixed stars are bodies like our sun, since they shine by their own light, and never change their relative positions. From this we are led to conjecture that each of them has its train of planets like our earth, and that there are as many solar systems as fixed stars. Then, as observation proves to us, that all the bodies of our system are mutually related to each other, we may conjecture that the different solar systems are not entirely disconnected with each other. Wherever we turn our eyes, we see connexion, order and stability; and we suppose these laws to embrace the whole universe, which thus forms a harmoniously framed whole. New observations confirm our reasonings on this point: they teach us that the fixed stars, which were formerly considered absolutely stationary, have a common motion, which becomes perceptible only in long periods; and we are led to the hypothesis that the whole host of stars, with all their planetary trains, revolve around some common centre, a central sun, which some astronomers suppose to be Sirius. The system of the universe is therefore the same, on a great scale, as the solar system is in miniature. This vast thought seems beyond our comprehension; and the innumerable motions of these millions of worlds in infinite space elude our conception. Here are perpetual motion and perpetual order, produced by the common principle of attraction which binds the universe together. All things appear to be balanced against each other; but the Unsearchable holds the scales in his almighty hand.—There are three systems of the world, or explanations of the solar system, which have acquired most celebrity: 1. That of the Greek astronomer Ptolemy (q. v.), who conceived the earth to lie immovable in the centre of the universe, while the heavenly bodies revolved about it in solid circles: this is called the *Ptolemaic system*. 2. The *Tychonic system*, proposed by Tycho de Brahe (see *Tycho*), was an attempt to improve the former. It supposed the earth stationary in the centre of the universe, with the sun and moon revolving around it, while the other planets revolved round the sun. 3. The *Copernican system* is that which is now received, and is demonstrated mathematically to be correct. (See *Copernicus*, *Solar System*, *Fixed Stars*, *Planets*, and *Astronomy*.)

Syzygy; the conjunction or opposition of any two of the heavenly bodies. (See *Moon*.)

Szent; Hungarian for *saint*; found in many geographical names, as *Szent Ianos* (St. John).

Szigeth, vár (properly *Nagyszigeth*, or *Frontier-Szigeth*, to distinguish it from two places of the same name in Hungary), is of historical importance on account of its heroic defence by count Nicholas Zrinyi. (q. v.) Szigeth is, at present, a market town, on a low island, formed by the Almas, and belongs to the county of Schümeg. It is fortified. It contains one Greek and two Roman Catholic churches (of which one was erected for a mosque), one Franciscan monastery, and the castle of count von Festetics. The inhabitants are partly Magyars, partly Germans and Rascians. The place has some commerce. As early as in 1556, Szigeth was twice besieged without success by the Turks. In 1566, the noble defence of it by Zrinyi took place. When Zrinyi at last preferred death to a dishonorable captivity, not one of its defenders survived. (See *Zrinyi*.) The Turks themselves admitted a loss of 7000 janizaries and 20,000 men at the siege of Szigeth. In 1689, the margrave of Baden took it again. Lon. 17° 56′ E.; lat. 46° 8′ N.

T.

T; the twentieth letter in the English alphabet, representing the sound produced by a quick and strong emission of the breath after the end of the tongue has been placed against the roof of the mouth near the roots of the upper teeth. The strength with which the breath is emitted in pronouncing *t* is all that distinguishes this sound from that of *d*. T is, therefore, a lingual; it is also a mute. As *d* and *t* are so nearly related, it is natural that they should often take each other's places, as is the case also with *t* and *s*, on account of the similarity of their pronunciation. (See the article *S*.) One of the main differences between Lower and Upper German (see *Low German*) is that the Lower German, almost invariably, puts a *d* where the Upper German has a *t*. On account of the hardness of this letter, it is used to separate liquids or vowels, as in the German words *kenntniss*, *öffentlich*, and the French *fera-t-il*, *y-a-t-il*. The English *th*, which, though a compound character, represents but a single sound, has two pronunciations, as in *this* and *thing*: the former is a sound between *d* and *t*, and the latter between *t* and *s*; so that foreigners whose native language does not contain these sounds, often say *dis* and *sing* for *this* and *thing*, or *nossing* for *nothing*. The Greeks had a proper character to designate the consonant between δ and τ, viz. θ or ϑ, which, however, was accompanied by a lisp. The Latins, who had no such character, used the *th* instead, particularly in such words as were directly derived from the Greek. The most ancient northern tribes of Europe had also the sound of *th*; and their *runes* (q. v.) had a proper character for it, which, however, Adelung thinks can be proved to be derived from the Greek θ. The language of the Anglo-Saxons also contained a consonant sound between *d* and *t*, pronounced with a lisp, like the Greek θ, and designated by a character resembling our p, for which their descendants, when they exchanged the Anglo-Saxon alphabet for the Latin, substituted *th*. The ancient Germans had no alphabet which can be called properly their own, but adopted the Latin characters after their conversion to Christianity. It is not known whether there existed a θ in their ancient dialects, pronounced with a lisp, like our *th*; but it seems, nevertheless, that they were sensible of a sound between *t* and *d*, and made various attempts to express it. The unknown translator of a piece of Isidorus, considered the most ancient German writer, uses *erdha* for *erde*, earth; *dhuo* for *da*, there; *dhanne* for *dann*, then; *dher* for *der*, the masculine article; *dhiz* for *dies*, this. Yet he does not add an *h* to every *d*, and writes *abgrunidiu*, *mittungardes*, *herduuom*, &c. The *th* appears more rarely in his works; yet he writes *anthlutte* for *antlitz*, face. The next writer in the order of time, Kero, uses neither *dh* nor *th*, and writes *teil* for *theil*, part; *tuan* for *thun*, to do; *tat* for *that*, deed. Yet Otfried, who seems to have reflected more deeply on his language, revived the *th*. However this may be, it is certain that the ancient pronunciation of the German *th* is lost; and there exists, at present, in that idiom, no middle sound between *t* and *d*, though the Germans use the *th* in writing. *Theil*, *thau* and *ruthe* do not differ at all in sound from *teil*, *tau* and *rute*. T is used as an abbreviation on ancient monuments, &c., for *Titus*, *Titius*, *Tullius*. As a numeral, it signified 160, according to the verse:—

T quoque centenos et sexaginta tenebit.

T, with a dash over it, thus, $\overline{T}$, signified 160,000. Among the Greeks, τ′ denoted 300, and ', 300,000. The ט of the Hebrews signified 9; and with two points placed horizontally over it, thus, ט̈, it denoted 9000. Sometimes the acute accent over this or any one of the first nine letters multiplied its value a thousand times. T, on French coins, denotes the mint of Nantes. When the Roman tribunes approved of senatorial decrees, they subscribed a T. In music, T signifies *tenor*, also *tace*, to indicate silence; and in concerts it is likewise the sign of *tutti*, a direction to the whole band to play after a solo. It also stands for *trillo*, a shake. The word T is used also to denote things of this form, as a T bandage, in surgery, one consisting of two bands which cross each other; or the T palace in Mantua. (q. v.)—For the use of T in modern abbreviations, see *Abbreviations*.

Ta (*great*); a Chinese word, used in many geographical names, as *Ta-chan* (great mountain).

Taaut. (See *Hermes Trismegistus*.)

Tabard (now corrupted into *Talbot*); an inn in the borough of Southwark (London), from which Chaucer and his companions set out on their pilgrimage to Canterbury. Over the entrance is this inscription: "This is the inn where Geoffrey Chaucer, knight, and nine and twenty pilgrims, lodged, in their journey to Canterbury, in 1383." In the yard is a picture representing their entrance into Canterbury. The original house was, however, burnt down in 1676, when the present building was erected on its site.

Tabby, in commerce; a kind of rich silk which has undergone the operation of tabbying, or being passed through a calender, the rolls of which are made of iron or copper, variously engraven, which, bearing unequally on the stuff, renders the surface unequal, so as to reflect the rays of light differently, making the representation of waves thereon.

Tabernacle (Latin, *tabernaculum*, a tent) is used in the Hebrew writings for the tent, or sanctuary, in which the sacred utensils were kept during the wanderings of the Israelites in the desert. It was always placed in the middle of the camp, and borne by Levites. It was fixed at Shiloh. After the temple (q. v.) was erected, the holy instruments were removed thither. The *feast of tabernacles* was a Jewish festival, designed to commemorate the nomadic period of the national history, when the people dwelt in tents. The feast continued eight days, during which booths were erected and occupied by those engaged in celebrating the ceremonies.—*Tabernacle* is also used to signify the box in which the host is kept on the altar in Roman churches, and for the niche or cabinet in which the sacred relics, images, &c., are preserved. The Methodists often call their meeting-houses *tabernacles*.

Tablature; a word formerly applied to the collection of signs used in a musical composition; so that to understand the notes, clefs, and other marks, in such a way as to be able to sing at sight, was to be skilled in the tablature. The chief signs were letters, ciphers, and, at a later period, the lines indicating the octave in which a note was to be performed. Letters were used until the eleventh century, when the proper notes were introduced. (See *Note*.) As the latter are an Italian invention, they were called the *Italian tablature;* which name, however, soon went out of use; and the old signs alone are now understood by *tablature*.

Table, in perspective, denotes a plane surface, supposed to be transparent, and perpendicular to the horizon. It is always imagined to be placed at a certain distance between the eye and the objects, for the objects to be represented thereon, by means of the visual rays passing from every point thereof through the table to the eye; whence it is called *perspective plane*.—*Table*, among the jewellers. A table-diamond, or other precious stone, is that whose upper surface is quite flat, and the sides cut in angles; in which sense, a diamond cut *tablewise* is used in opposition to a rose-diamond.—*Table*, in mathematics; systems of numbers, used for expediting astronomical, geometrical, and other operations; thus we say *tables* of the stars; *tables* of sines, tangents, and secants; *tables* of logarithms, rhumbs, &c.; sexagenary *tables*.

Table Mountain, in Pendleton district, South Carolina, is about 4000 feet above the sea, and 3138 above the valley at its base. It presents, on one side, a tremendous precipice of solid rock, about 300 feet nearly perpendicular. Some have estimated its height to be even three times as great; and we have no measurement of it that can be relied on. At the bottom of the precipice, a dismal valley is sunk far below the surrounding country. The precipice, viewed from this valley, appears like a mighty wall raised to the heavens. The summit of the mountain is often enveloped in the clouds.

Table, Round. (See *Round Table*.)

Tables, Twelve. (See *Twelve Tables*.)

Tableaux Vivants. (See *Pictures, Living.*)

Taboo. This word, significant of a peculiar custom prevalent among the South sea islanders, is used, in general, to denote something consecrated, sacred, forbidden to be touched, or set aside for particular uses or persons. It is applied both to persons and things, and both to the object prohibited and to the persons against whom the prohibition extends. Thus a consecrated piece of ground is *taboo;* the act of consecrating it is called *taboo*, and the persons who are excluded from entering are also said to be *tabooed.* A particular article of food is sometimes tabooed at a certain season, in order to preserve it against a season of scarcity, &c. The object of the institution seems to have been the imposition of certain restraints upon a rude and lawless people, like the establishment of the cities of refuge, sanctuaries, &c., in the rude ages of European society.

Tabor, the mount of transfiguration, is situated in Galilee, about fifty miles from Jerusalem. (See *Galilee*, and *Transfiguration.*)

Taborites. (See *Hussites.*)

Tabular Spar, or **Table Spar** (*Schaalstein* of Werner); a massive mineral, whose primary form is regarded as a doubly-oblique prism. The cleavage in the direction of two faces, intersecting each other at angles of 95° 25′, is easily obtained, though in one direction it is more easily effected than in the other. The remaining cleavages are with difficulty distinguished; lustre vitreous, inclining to pearly, particularly upon the perfect faces of cleavage; color white, inclining to gray, yellow, red and brown; streak white; semi-transparent to translucent; rather brittle; hardness about that of apatite; specific gravity 2.8; composition lamellar, generally longish, and strongly coherent. It is composed of

Silex,	51.60
Lime,	46.41
Mechanical admixtures,	1.11
	99.12

Before the blow-pipe, it melts on the edges into a semi-transparent colorless enamel. By fusing lime and silex in the requisite proportions, cleavable masses of the present species have been obtained. It was first found at Cziklowa, near Prawitza, in the Bannat of Temeswar, in several copper mines. In Finland, it occurs in limestone, at Edinburgh in greenstone at Castle hill, and in Ceylon along with garnet. In the U. States, at Willsborough, New York, upon lake Champlain, a vein of it, mixed with garnet, several feet in width, appears to cross a mountain of gneiss. It has been found abundantly near Grenville, in Canada, and at Easton, in Pennsylvania. A variety of the present species, from Capo di Bove, near Rome, was first called *Woollastonite*, but is now known to belong to tabular spar.

Tachygraphy, or **Tacheography.** (See *Stenography.*)

Tacitus, Caius Cornelius, was descended from a plebeian branch of the celebrated Cornelian family, and was probably born at the close of the reign of Claudius, or in the beginning of that of Nero. Of his education and early life we know little. He seems to have been first appointed to public office in the reign of Vespasian, when, according to a statement of the elder Pliny, he was named procurator of Belgic Gaul. On his return to Rome, he was treated with distinguished favor by Titus, and was created questor or edile. He himself alludes to this circumstance, but in very general terms, in his works. In the reign of Domitian, he became pretor (A. D. 88), and one of the quindecemviral college, whose duty it was to superintend the sacrifices. Disgusted with the tyranny of Domitian, Tacitus left Rome on the death of his father-in-law Julius Agricola, but again returned, after the murder of that monster, to live under the mild government of Nerva. The latter rewarded his services with the consulship, A. D. 97. He lived in the closest intimacy with the younger Pliny, and had a very extensive practice in the profession of law, acquiring a high reputation as an orator. His domestic circumstances were no less favorable: his wife, the daughter of Julius Agricola, was distinguished among the Roman ladies of the time for her virtues; and it seems probable that the emperor Tacitus was a descendant of the great historian. The time of his death is uncertain; but it probably took place during the reign of Adrian. We have four historical works from his pen. His Annals contain an account of the principal events from the death of Augustus to that of Nero, a period of fifty-four years. Books 6th to 10th inclusive are lost: the first five books were discovered only 300 years ago, by the treasurer of Leo X, in the monastery of Corvey. His History (of which only four books, and a part of the fifth, are extant) begins with the year 69

A. D., when Galba wore the purple, and ends with the accession of Vespasian (71). His Germany (*De Situ, Moribus et Populis Germaniæ*), and his life of Agricola, are his only other historical works. The Dialogue on the Decline of Eloquence is by some attributed to him. (See *Quintilian.*) The works of this writer have been pronounced, by the unanimous voice of his contemporaries and of posterity, the masterpieces of a great mind. Racine declares him to be the greatest painter of antiquity; and, according to Gibbon, he was the first historian who applied the science of philosophy to the study of facts. Independently of the value of his matter, which is of the highest importance, from the facts and profound views of Roman history, during the first half century of the Christian era, which it affords, his writings are incomparable, considered as works of art. In the choice and disposition of his materials, we recognise the comprehensive genius of a scholar, and the forming hand of an artist, bringing out order and unity in the midst of confusion, and grouping the complicated details of life and manners in artful and expressive pictures. In drawing the character of men and events, he displays a wonderful acuteness and strength; while, amidst the corruption of a degenerate and vicious age, he maintains the elevation of a virtuous mind. His extreme conciseness has no appearance of affectation, but seems to be dictated by the peculiarity of his temper and feelings. His style is forcible, but there is nothing labored in his expressions, nothing superfluous in his delineation: the colors are used sparingly, but the light and shade are disposed with masterly skill. Among the best editions of his works are those of Gronovius (Amsterdam, 1685, and Utrecht, 1729), of Brotier (Paris, 1771, 4to., and 1776, 12mo.), of Ernesti (Oberlin's, Leipsic, 1801), and of Panckoucke (Paris, 1827, folio). The whole of Tacitus has been translated into English by Murphy and by Gorion.

Tacking, in navigation. (See *Ship.*)

Tackle; a machine formed by the communication of a rope with an assemblage of blocks, and known, in mechanics, by the name of *pulley*. Tackles are used in a ship to raise, remove, or secure weighty bodies, to support the masts, or to extend the sails and rigging. They are movable, as communicating with a runner, or fixed, as being hooked in an immovable situation; and they are more or less complicated in proportion to the effects which they are intended to produce. The application of the tackle to mechanical purposes is called *hoisting*, or *bowsing*.—*Ground tackle* implies the anchors, cables, &c.

Tacksmen. (See *Clan.*)

Taconic, or **Taghkannuc**; a mountain range on the borders of Massachusetts and New York. The two most elevated peaks are west of Sheffield, the highest about 2800 feet above the ocean.

Tactics proper is the branch of military science which relates to the conduct of troops in battle. *Elementary tactics* teaches the preparation of them for it by instruction in military exercises: hence every species of troops, as cavalry, artillery, light and heavy infantry, &c., has its peculiar tactics. Since the French, or, we may say, since the American, revolution, tactics have undergone an essential change. In recent times, a difference has been made between strategy and tactics. (See the articles *Military Sciences*, and *Strategy.*) The word is derived from τακτικα, which comes from τακτός (ordered, placed, commanded).

Tactics, Naval. (See *Navigation*, *Navy*, and *Ship.*)

Tadmor. (See *Palmyra.*)

Tadpole; the young produced from the eggs of the frog, which is extremely unlike the animal in its perfect state, seeming to consist only of a head and tail. The head is large, black and roundish, the tail slender, and margined with a broad, transparent fin. Its motions are very lively. Its food consists of small water plants and different animalculæ. The mouth has very minute teeth. About five or six weeks after it is hatched, the first change takes place. The hind legs first appear, and, gradually increasing in length and size, are succeeded, in about two weeks, by the fore legs, which are formed at an earlier period beneath the skin. The tail now decreases, so that, in a day or two, it is quite obliterated. After this change, the animal leaves the water, and covers the shores in myriads. The sudden appearance of such multitudes of young frogs has probably induced the popular but groundless belief of their having fallen from the clouds in showers. It has now become a perfect frog. (See *Rana.*) Tadpoles, just after they are hatched, are perfectly transparent; and, when placed before the double microscope, the pulsation of the heart may be easily seen, and the blood protruded thence may be observed in its passage through the whole body.

Tænarus. (See *Tenarus.*)

Tafferel; the uppermost part of a ship's stern, being a curved piece of wood, and usually ornamented with some device in sculpture.

Taffia, or Tafia, in the French West India islands; that spirituous liquor which is called by the English *rum*, made of fermented molasses. Taffia is inferior to rum in taste and smell.

Taganroc, or Taganroka; a town in the Russian government of Ekaterinoslav, on the sea of Azoph, next to Odessa the most flourishing commercial place in the south of Russia; lat. 47° 13′ N.; lon. 38° 39′ E. Its population, in 1823, was 14,000, mostly Greeks, and rapidly increasing. Only ships of moderate burthen can come up to the town; and these must discharge part of their cargoes at Feodosia (see *Caffa*) or Kertsch. (q. v.) These three towns have each its peculiar government. The climate is mild and healthy, and the country around is fertile, producing fruit, corn, grapes, mulberries, &c. Taganroc was founded by Peter I, in 1699. Alexander died here in 1825.

Tagliacozzi. (See *Rhinoplastic.*)

Tagliamento; a small river of Austrian Italy, emptying into the Adriatic, over which Napoleon forced a passage, March 16, 1797, in the face of the archduke Charles, at the head of the Austrian forces.

Tagus (Spanish, *Tajo*; Portuguese, *Tejo*), the largest river of Spain, issues from the mountains of Albaracim, a little more than 100 miles from the Mediterranean. Pursuing a south-westerly course, it passes by Aranjuez, Toledo, Talavera and Alcantara, enters Portugal, and passes by Abrantes, Santarem and Lisbon, and, about seven miles below Lisbon, flows into the Atlantic. Length 450 miles. It receives the tide at a considerable distance above Lisbon, but is navigable only as far as Abrantes. It absorbs the waters collected between two parallel ranges of mountains. It flows through a mountainous country, and its current is much broken by rocks and cataracts.

Tahiti. (See *Society Islands.*)

Tai; Chinese for *fortress*, in many geographical names. (See *Tchai.*)

Tail. (For estates in tail, or entailed estates, see *Entail.*)

Takrour. (See *Nigritia.*)

Talapoins; priests of Fo. (q. v.)

Talavera; a town in Spain, lying on the Tagus, thirty five miles west of Toledo. A severe battle was fought here July 28 and 29, 1809, between the French, under Soult, and the English, under Wellington, in which the former were defeated. (See *Spain.*)

Talbot, John, first earl of Shrewsbury, a famous commander, born in 1373, was the son of sir Richard Talbot. In 1414, he was appointed lord-lieutenant of Ireland, in which post he continued seven years, and performed great services for the crown, by keeping the native Irish in subjection. In 1420, he attended Henry V to France, served under the regent, the duke of Bedford, and, by his exploits, rendered his name terrible to the enemy. He commanded the troops sent to the province of Maine, and made himself master of Alençon. He afterwards joined the earl of Salisbury at the siege of Orleans. (See *Joan of Arc.*) Talbot was soon after made prisoner. After a captivity of three years, he was exchanged; on which he repaired to England to raise fresh troops, and, recrossing the sea, took several strong places in succession, and, for his eminent services, was made marshal of France, and, in 1442, earl of Shrewsbury. The following year, he was appointed one of the ambassadors to treat of peace with Charles VII; after which he was sent once more to Ireland, and the earldom of Wexford and Waterford, in that kingdom, was added to his honors. The English affairs in France continuing to decline, he was made lieutenant-general of Aquitaine, in which capacity he took Bordeaux, and received the allegiance of several other towns. Receiving intelligence that the French were besieging Chatillon, he marched to its relief, and made an attack upon the enemy; but he was left dead on the field of battle, 1453, at the age of eighty; and, the English being wholly routed, their expulsion from France soon followed.

Talc; a well known and widely diffused species of mineral. It is rarely seen under a distinctly crystalline form. Its primary form is believed to be a right rhombic prism of 120° and 60°. It is sometimes seen in minute hexagonal plates, and in a figure resembling the frusta of two cones, applied base to base. Cleavage highly perfect; fracture not observable; lustre pearly upon the faces of crystallization and of cleavage; color various shades of green, as blackish-green, leek-green, celandine-green, and apple-green; streak similar to the color; semi-transparent to translucent. It exhibits different colors, sometimes in different directions; sectile in a high degree: thin laminæ are easily flexible. It is one of the softest of all solid minerals. The massive kinds present a great variety of structure. The composition varies from imperfect columnar to granular and impalpable. The individuals are sometimes strongly coherent with each other, or flat, so as to give rise to an imperfect slaty structure. The species talc has been subdivided into a great number of varieties or sub-species, the most of which depend upon colors, composition and foreign admixtures. The varieties of dark-green (leek-green and celandine-green) colors, inclining to brown, constitute the *chlorite*, which has been subdivided into *common*, *slaty*, and *earthy* chlorite. The first of these contains the granular or crystalline varieties; the second embraces those in which the individuals can scarcely be traced, and which exhibit a slaty texture; the earthy chlorite consists of such as are but loosely coherent, or already in a state of loose, scaly particles. Immediately with those varieties of chlorite whose composition is impalpable, the *green earth* is connected. The species talc comprehends the varieties of pale-green, particularly apple-green, gray, and white varieties, and is divided, in popular language, into *common*, *earthy*, and *indurated* talc. Simple varieties are common talc; also such compound ones in which cleavage is transformed into slaty structure, or such as consist of columnar particles of composition: earthy talc, or *nacrite*, consists of loose particles, or such as are but slightly cohering; and indurated talc refers to imperfect and coarse slaty varieties, in which this kind of structure is more the effect of composition than of imperfect cleavage. If this structure be sufficiently imperfect to become coarse and indistinctly granular, *potstone*, *soapstone*, *lapis ollaris*, or *steatite*, is formed, which, possessing the united properties of softness and tenacity, may be easily turned, and wrought into vessels. Four varieties of the present species, foliated talc, analyzed by Vauquelin, slaty chlorite, analyzed by Gruner, green earth, analyzed also by Vauquelin, and steatite by Klaproth, have yielded

Silex,	62.00	29.50	52.00	59.50
Magnesia,	27.00	21.39	6.00	30.50
Oxide of iron,	3.50	23.39	23.00	2.50
Alumine,	1.50	15.62	7.00	0.00
Water,	6.00	7.38	4.00	5.50
Potash,	0.00	0.00	7.50	0.00
Lime,	0.00	1.50	0.00	0.00

These analyses, as well as those of several other varieties of the species, show that our information respecting its chemical constitution is still very defective. Before the blow-pipe, some of them lose their color, and are fused with difficulty; others are changed into a black scoria; still others are infusible. Common talc, indurated talc, steatite, potstone, and slaty chlorite, constitute beds of themselves in primitive mountains. The latter often contains imbedded crystals of magnetic iron. Common chlorite is found in beds in rocks consisting chiefly of ores of iron and calcareous spar with augite. Other varieties, and, among them, the small scaly crystals of chlorite and earthy chlorite, occur in veins of various descriptions, and in the crystal caves of the Alps. Green earth occurs in amygdaloidal rocks, lining vesicular cavities. Tyrol, Salzburg, Switzerland, Sweden, Norway, Scotland and New England abound in those varieties which by themselves form mountain masses. The soapstone of Cornwall is impalpable in its composition, nearly white, or sometimes mottled with green and purple: when first raised, it is so soft as to allow of being kneaded like dough; but, by exposure, loses a part of its moisture, and is then translucent on the edges, yields to the nail, and possesses an unctuous feel. A similar variety is met with in Wales. It is included in serpentine, and sometimes embraces veins of amianthus. The white varieties of steatite, or those that become so by calcination, are employed in the manufactory of the finest porcelain; other varieties are said to be used in fulling. The Arabs, according to Shaw, use steatite in their baths instead of soap; and it is confidently asserted that the inhabitants of New Caledonia either eat it alone, or mingle it with their food. Humboldt says, that the Itomaques, a savage race, inhabiting the banks of the Orinoco, are almost entirely supported, during three months of the year, by eating this variety of talc, which they first slightly bake, and then moisten with water. The varieties known under the name of potstone have been in use for the construction of a variety of utensils from time immemorial. It is particularly valuable as a fire-stone in furnaces, and is worked into plates in the fabrication of stoves. Numerous localities of it exist in the north-western part of Massachusetts, and, in Vermont, green earth is used, both raw, as a green color, and burnt, as a reddish-brown color, for painting houses, &c. Its most important deposits are the Monte Baldo, near Verona, Iceland, and the Tyrol. The Venetian talc, a variety of common talc, of a greenish-white color, formerly used as a medicine, seems to be no longer in use, except for the purpose of removing oil-spots from woollen clothes. The localities of common talc are too numerous to be mentioned; a few, however, which are somewhat remarkable, may be indicated. At Cumberland, in Rhode Island, it occurs of a delicate green color, in large columnar pieces, which are contained in a rock of steatite. At Smithfield, in the same region, a beautiful white scaly talc is found, in irregularly shaped masses, disseminated through white limestone. A delicate apple-green variety of columnar talc comes from Bridgewater, in Vermont, where it occurs in veins in a steatitic rock.

Tale; a nominal or imaginary money in China, estimated by Americans as bearing the proportion of 133 dollars to 100 tales.

Talent. (See *Drachm.*)

Tales. This term, though used somewhat indefinitely, may, perhaps, be correctly defined as signifying those simple fictitious narratives, in prose or in verse, which hardly extend beyond a single adventure, or group of incidents, without the variety of plot and character which characterizes the novel and the romance. Thus it answers to the French *conte*, the German *märchen*, and the Italian *novelle.* (See *Novel*, and *Romance.*) "A work of great interest," says sir W. Scott (preface to Lady of the Lake), "might be compiled upon the origin of popular fiction, and the transmission of similar tales from age to age, and from country to country. The mythology of one period would then appear to pass into the romance of the next century, and that into the nursery tale of the subsequent ages. Such an investigation, while it went greatly to diminish our ideas of the richness of human invention, would also show, that these fictions, however wild and childish, possess such charms for the populace as enable them to penetrate into countries unconnected by manners and language, and having no apparent intercourse to afford the means of transmission." While, in some countries, the people have found amusement in fictions founded on their remote history, or in listening to mythological narratives, the natives of the East have long been celebrated for their tales or stories, founded on familiar incidents and comic scenes, or on wild legends of good and bad spirits. The Hitopadessa (see *Pilpay*) of India, and the Thousand and one Days, Thousand and one Nights, the *Tootinameh*, or Tales of a Parrot, &c., of Arabia and Persia, are specimens of the wealth of the Eastern story-tellers in these narratives. (See *Arabian Nights.*) From their Eastern neighbors, the Asiatic Greeks borrowed something of their love for this amusement, as appears from what we know respecting the Milesian Tales, which, however, have all perished. The *Gesta Romanorum*, composed towards the close of the thirteenth century, and consisting of classical stories, Arabian apologues, and monkish legends, was the great source from which the Italian *novelle*, the French *contes* and *fabliaux*, and the English tales, were derived. The earliest collection of Italian *novelle* was the *Cento Novelle Antiche*, made not long after the date of the *Gesta Romanorum*, and composed of anecdotes and stories from the romances of chivalry, the *fabliaux* of the French *trouveurs*, and chronicles, together with incidents and jests, gathered from tradition, or of contemporaneous origin. Then came Boccaccio (q. v.), who gave a more dramatic form, and more grace of style to his *Decameron.* He was followed by Sacchetti, Ser Giovanni, Bandello, Massuccio, &c. They were imitated in France in the *Cent nouvelles Nouvelles*, tales full of imagination and gayety, supposed to be related at the Burgundian court. The *Cent Nouvelles* of Margaret of Valois (q. v.) were of a similar character. The tales of the *trouveurs* (q. v.), which were recited at festal meetings among the Northern French, are of still earlier origin than the Italian *novelle.* Le Grand has published a collection of them under the title of *Fabliaux ou Contes du XII et XIII Siècle* (Paris, 1779, 5 vols.), from which a selection has been translated into English by Way (Tales of the XII and XIII Centuries, second edition, with notes, by Ellis). A more recent collection of these *fabliaux* was published at Paris, in 1823, in 2 vols. (*Nouveau Recueil de Fabliaux et Contes, du XIII et XIV Siècle*, by Meon). In England, the first important work which marks the complete transition from Anglo-Norman to English literature, is that of Chaucer (q. v.), whose Canterbury Tales were borrowed from the same sources as the narratives of the Italian novellists and the French *fabliers*, or immediately from these latter productions themselves. (On the sources of Chaucer, see Ritson's edition of Warton's *History of English Poetry*.)—Of a different character from the foregoing, are the fairy tales and popular stories of the nursery. Of the former, we have given an account in the article *Fairies*. Our common nursery tales are found to exist in the popular traditions of all the Teutonic nations, and seem to be of much higher antiquity than romances and poems of much greater pretensions. "Jack the Giant-Killer and Tom Thumb," observes an English writer, "landed in England with Hengist and Horsa;" and the brothers Grimm (q.v.), who have recently thrown much light on nursery literature in their *Kinder-und Haus-Märchen* (second edition, 3 vols., 1820), do not hesitate to refer the origin of these stories to the Scandinavian sagas. See, on this subject, the article *Antiquities of Nursery Literature*, in the Quarterly Review, volume twenty-first.

Talesmen. (See *Jury*.)

Taliacotius, or Tagliacozzi. (See *Rhinoplastic*.)

Taliesin; the most celebrated of the ancient British poets, and therefore termed *Pen Beirdd*, or the chief of the bards. He flourished between 520 and 570; and many of his compositions are extant, and have been printed in the Welsh Archæology. He was ranked with the two Merlins, under the appellation of the three principal Christian bards. Tradition represents him as an orphan exposed by the side of a river, where he was found by Elfin, the son of Gwyddno, by whom he was educated and patronised. He studied in the school of the famous Cadog at Llanveithin, in Glamorganshire, and, in the mature part of his life, was the bard of Urien Rheged, a Welsh prince, as appears by many of his poems addressed to that chieftain. (See *Bard*.)

Talisman (Arabic, *figure*) is a figure cast or cut in metal or stone, and made, with certain superstitious ceremonies, at some particular moment of time, as when a certain star is at its culminating point, or when certain planets are in conjunction. The talisman thus prepared is supposed to exercise extraordinary influences over the bearer, particularly in averting disease. In a more extensive sense, the word is used to denote any object of nature or art, the presence of which checks the power of spirits or demons, and defends the wearer from their malice. The amulet (q. v.) is much the same as the talisman, though, according to some, it is more limited in its virtues. As they were both used most frequently, and, perhaps, originally, to avert disease, we find them playing a conspicuous part in the history of medicine, among all nations, from the earliest to the most recent periods. The nature of the talisman has been very different among different nations. The Egyptians made use of images of their gods and of sacred animals, such as the ibis and the scarabæus; the Greeks used little tablets, inscribed with the Ephesian words, &c.; the Romans employed various idols, which they suspended upon the body by chains; the Arabians and Turks make use of sentences from the Koran; and we also find, in the East, medals of particular metals, struck under a particular constellation, and marked with magical signs; in the middle ages, relics, consecrated candles, and rods, rosaries, images of saints, &c., were employed, and still are, in some parts of Christendom; among some savage nations, the *fetich* (q. v.), and, among the American Indians (see *Indians*), the *medicine*, are of a similar character. In the middle ages, astrology, and the knowledge of the virtues of talismans and amulets, formed an important part of medical science; and the quacks of modern times sometimes have recourse to similar means. (See *Magic*.)

Tallahassee, the seat of government of Florida Territory, is situated in Middle Florida, about twenty-five miles north of Apalachee bay (lat. 30° 28′ N.; lon. 84° 36′ W.), and is 870 miles from Washington. The position of this town was fixed upon as the seat of government in 1824. It was divided into lots in 1825, and immediately incorporated as a city. In two years after the erection of the first building, its population was 800. In 1830, it contained about 1200; and the county of Lean, in which it is situated, contained 6493. The situation of Tallahassee is remarkably pleasant, and is supposed to be healthy. The ground is considerably elevated, and the country around is high and rolling. St. Marks, situated near the head of the bay, is the nearest seaport. An elevated chain of rolling hills bounds the shores of the Mexican gulf; and Tallahassee is three miles north of this ridge. The country around it is generally fertile, and is suited to the cultivation of sugar. At present, it is mostly covered with oak, hickory, pine, wild cherry, gum, ash, dogwood, mahogany, and magnolia. The mahogany is nearly equal to that from Honduras. Fish abound in the neighboring lakes, and game is abundant in the forests.

Tallart, Camille d'Hostun, duke de, marshal of France, descended of an ancient family of Dauphiny, was born in 1652, entered young into the army, and, after serving under the great Condé in Holland, and under Turenne in Alsace, was engaged in the brilliant campaigns of 1674 and 1675. He distinguished himself subsequently on various occasions, and, in 1693, was made a lieutenant-general. In 1697, he was sent ambassador to England, to negotiate concerning the succession to the crown of Spain on the death of Charles II. In 1702, Tallart was appointed to the command of the French troops on the Rhine, and, soon after, was honored with a marshal's staff. He subsequently defeated the imperialists before Landau, and, having taken that place after a short siege, announced his success to Louis XIV in the following terms: "I have taken more standards than your majesty has lost soldiers." In 1704, he was opposed to Marlborough; and, being taken prisoner at the battle of Blenheim, was carried to England, where he remained seven years. On his return to France, in 1712, he was created a duke; and, in 1726, was appointed secretary of state. His death took place in 1728.

Talleyrand, Charles Maurice de Périgord, prince de, a distinguished French statesman, and one of the founders of French liberty, is descended from an ancient family, to which, in the middle ages, belonged the sovereign counts of Périgord. The celebrated princess des Ursins, who played so conspicuous a part at the court of Philip V of Spain, during the war of the Spanish succession, was his maternal grandmother. Previously to the fall of Napoleon, he was known as the prince of Beneventum, but since that event, has been styled prince Talleyrand. He was born at Paris, in 1754, and, being designed for the church, was placed at the seminary of Saint Sulpice. The young abbé de Périgord was distinguished for his wit, his insinuating manners, his talent for business, and his insight into character, and, in 1780, was appointed agent-general of the clergy. At the breaking out of the revolution, he was bishop of Autun, and had already displayed so much acuteness and dexterity in seizing the hidden clew of affairs, that Mirabeau, in his secret correspondence with Berlin, pronounced him one of the most ingenious and powerful minds of the age. This judgment has proved prophetical. Elected deputy of the clergy of his diocese to the states-general, in 1789, he early foresaw, or rather contributed to guide and hasten, the change of public opinion, and, on the 19th of June, voted in favor of the union of the clergy with the deputies of the third estate. He was soon after named one of the committee on the constitution, and proposed the abolition of tithes. In the second committee on the constitution, he likewise brought forward a plan for applying the church domains to the public use. In the beginning of 1790, the bishop of Autun was chosen president of the assembly; and the proposition for establishing a uniform system of weights and measures emanated from him. At the celebration of the anniversary of the 14th of July, he officiated at the altar of the country; and he was one of the first to take the constitutional oath imposed on the clergy. With the bishops of Lydda and Babylon, the bishop of Autun consecrated the first constitutional bishops, and was excommunicated by the pope, Pius VI. Talleyrand immediately resigned his bishopric, and was chosen member of the directory of the department of Paris. In 1792, he was sent on a secret mission to England; and, while the Jacobins at home were denouncing him as the agent of the court, the emigrants in England accused him of being the emissary of the Jacobins; and the English minister ordered him to quit the country within twenty-four hours. M. de Talleyrand therefore retired to the U. States, where he occupied himself in commercial business. In 1795, the convention repealed the decree against him, and, in 1797, we find him among the founders of the constitutional society established at the Hôtel de Salm, where he read a memoir on the advantages of colonizing the coasts of Barbary, and another on the commerce of the U. States. His influence soon began to appear in public affairs; and, in July of that year, he was appointed minister of foreign affairs to the directory. It was at this time that the commissioners of the U. States (Gerry, Marshall and Pinckney) to France were treated with so much indignity, and made the subject of a singular intrigue, in which the name of Taleyrand was compromised.* The influence of Mad. de Staël, which had been employed in restoring him to France, had also been the principal instrument in procuring his nomination to the ministry; but the new minister, assailed on all sides by denunciations, threats and complaints, resigned his portfolio in July, 1799, after having published a defence of his conduct, entitled *Éclaircissements donnés par le Citoyen Talleyrand à ses Concitoyens.* Lucien Bonaparte was one of his most bitter assailants at this time; and a mutual hatred has ever since prevailed between them. The return of general Bonaparte from Egypt again restored the ex-minister to activity. He was one of the chief agents in the revolution of the 18th of Brumaire (q. v.), and was, immediately after, recalled to the ministry of foreign affairs. Here begins the most important period of his distinguished political career, a second period of which is formed by the events of 1814—15, and a third dates from the last French revolution, in 1830. The negotiations of Luneville (q. v.) and Amiens (q. v.) were conducted under his direction. From this period dates his great fortune, which has, however, suffered repeated shocks. Availing himself of his official information on secrets of state, he speculated largely in the funds. Having procured a brief from the pope, releasing him from his clerical vows, he immediately married Mrs. Grant, his mistress. The refusal of the first consul to admit her to court had nearly produced a rupture between Bonaparte and Talleyrand, which was avoided only by the former yielding to the wishes of the latter on that point.† When Napoleon assumed the imperial title, M. de Talleyrand was appointed grand chamberlain of the empire, and, June 5, 1805, was raised to the dignity of sovereign prince of Beneventum. His credit with the emperor began, however, to suffer; and, in 1807, he was removed from the ministry of foreign affairs, but, at the same time, was promoted to the post of vice-grand-elector, which gave him a seat in the public councils. His opposition to the invasion of Spain completed his disgrace, and a war of epigrams and raillery was carried on in the saloons between the conqueror of Europe and his disgraced minister. The latter was threatened with arrest; and, in 1814, when Napoleon left Paris to defend the French soil, he made an attempt to conciliate the prince, by pretending a confidence in him which he did not feel, and appointed him one of the council of regency. The republican and imperial ex-minister was placed at the head of the provisional government, April 1st, 1814, and governed France until the arrival of the comte d'Artois. (See *France.*) The influence of the prince of Beneventum with the foreign powers is known to have been very great; but the secret history of his connexion with the Bourbons remains yet to be explained. The emperor Alexander lodged at his *hôtel;* and, on the 12th of May, Talleyrand was once more named minister of foreign affairs, and in June was raised to the peerage under the title of prince de Talleyrand. Towards the close of the year, he was sent as plenipotentiary of France to the congress of Vienna. Napoleon made some unsuccessful attempts to attach him to his cause in the hundred days. The prince, too sagacious to trust to promises dictated by necessity, or faithful to the new cause which he had espoused, was one of the most zealous promoters of the declarations of March 13 and 25 against the emperor, and, joining Louis XVIII at Ghent, he returned to Paris with the king. Louis again conferred on him the portfolio of foreign affairs, with the title of president of the council (prime minister); but Talleyrand refused to sign the treaty so humiliating to France, and resigned his post in three months from his appointment. Pursued by the hatred of the *émigrés,* stigmatized as a traitor by the liberal party, and accused of being the cause of the death of the prince d'Enghien (q. v.), he now lost all influence in public affairs, though he still retained the post of grand chamberlain to the king. In 1818, he once more appeared upon the scene of politics, but in the new character of leader of the opposition in the chamber of peers. Here he distinguished himself in defence of the constitution against the gradual encroachments of the royal power. In 1827, he was assaulted by the marquis de Maubreuil, who struck him a blow on the face, which knocked him down. The reason assigned by Maubreuil for this attack was that he had been employed by the prince to assassinate Napoleon, and had not been rewarded for his labor in making the attempt. (See *Maubreuil.*) In 1828, his fortune suffered considerably by the failure of a great Paris house. After the revolution of 1830, the prince de Talleyrand was sent ambassador to London, where he has been the representative of France in the conferences between the five powers, for settling the affairs of Europe. (See the sequel of the article *France*, in the Appendix to this work.) Since the death of Casimir Perier, in 1832, he has returned (June) to France, and, it has been rumored, would be called to take the presidency of the council. As a statesman and minister, prince Talleyrand can be neither compared with Sully, nor Richelieu, nor Mazarin, nor Colbert; he seems to be peculiar in his power and his address. While Napoleon possessed the genius of victory, Talleyrand possesses the genius of politics; and both together were able to bridle and annihilate the revolution. Engaging without danger in all the catastrophes which have occurred, hovering unseen over the agitations which he has himself assisted to produce, variable as fortune herself, he seems to be the master of ceremonies to the revolutions which have followed each other in France with such rapidity during the last forty years. His character and real agency are perhaps not yet well understood, and must be drawn by his own hand.*

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* See, on the subject of this singular affair, Lyman's *Diplomacy of the United States*, vol. i, ch. 8 (2d edition, Boston, 1828).

† The following story is told of this lady:—M. de Talleyrand, having one day invited M. Denon, the celebrated traveller, to dine with him, told his wife to read the work of their guest, indicating its place in his library. Madame de Talleyrand unluckily got hold, by mistake, of the Adventures of Robinson Crusoe, which she ran over in great haste, and, at dinner, began to question Denon about his shipwreck, his island, &c., and finally about his man Friday.

Tallien, John Lambert, a French republican statesman, born at Paris in 1769, was the son of the porter to the marquis de Bercy, to whom he was indebted for his education. He commenced his political career as secretary to the deputy Broustaret, and then published a daily journal, called *Ami du Citoyen*, which was affixed to the walls of the metropolis. The Jacobins furnished the expenses of printing this paper, the object of which was to excite the indignation of the populace against Louis XVI and his ministers. Tallien soon became one of the most popular men of the revolutionary party, and was deeply concerned in the terrible commotions of the 10th of August, at which time he was secretary of the commune which had installed itself at the Hôtel de Ville, and which continued its sittings in spite of the assembly, becoming the centre and origin of the intrigues and massacres of that disastrous period. Being nominated a deputy to the convention, from the department of Seine and Oise, he often mounted the tribune, and was the constant advocate of violent measures. In the session of December 15, 1792, he strongly urged the immediate trial of Louis XVI, objected to allowing him counsel, and added new charges to the accusation against him. He afterwards voted for his death, and against an appeal to the people; and on the day of execution, January 21, 1793, he was president of the convention. He took part in most of the sanguinary proceedings which occurred during the ascendency of Robespierre; and, after defending Marat, assisting in the destruction of the Girondists, and becoming the advocate of the infamous Rossignol, he was sent on a mission to Bordeaux, where he showed himself the worthy associate of Carrier, Lebon and Collot d'Herbois.' He was checked in this sanguinary career by the influence of madame de Fontenay, a woman remarkable for her personal beauty, who, having been imprisoned at Bordeaux, as she was going to join her family in Spain, owed her life to the compassion of Tallien. (See *Chimay.*) He took her with him to Paris, whither he went to defend himself before the convention against the charge of moderantism. After the fall of Danton and his party, Tallien perceived that he should become one of the next victims of Robespierre, if he did not strike the first blow. Accordingly, at the sitting of the convention of the ninth of Thermidor, 1794, he ascended the tribune, and, after an animated picture of the atrocities which had taken place, and which he ascribed to Robespierre, he turned to the bust of Brutus, and, invoking the genius of that patriot, drew a dagger from his girdle, and swore that he would plunge it into the heart of Robespierre, if the representatives of the people had not courage to order his immediate arrest. On the morrow, Tallien had the satisfaction to announce to his colleagues that their enemies had perished on the scaffold. (See *Robespierre.*) Being elected a member of the committee of public safety, the Jacobins replaced his name on their list. At this period he married his *protégée*, madame de Fontenay. He took a part in all the proceedings of the assembly, and used his power and influence to promote the interests of justice and humanity. This was the most honorable period of his life; but the recrimination and opposition which be experienced prevented him from enjoying tranquillity. In July, 1795, he was sent, with extensive powers, to the army on the coasts of Brittany; but after the victory of the republicans at Quiberon, he returned to Paris. He subsequently became a member of the council of five hundred, under the constitution of the year III; but his influence gradually declined, and he was at length reduced to such a state of political insignificance, that he thought proper to retire to private life. Domestic uneasiness induced him to wish to leave France; and he followed Bonaparte to Egypt, as one of the savans attached to the expedition. He became a member of the Egyptian institute, and editor of the *Décade Egyptienne*, printed at Cairo; besides being administrator of the national domains. After Bonaparte left Egypt, general Menou treated Tallien harshly, and obliged him to return to France. The vessel in which he sailed was captured by the English, and he was taken to London, where he received much attention from the leaders of the whig party. The duchess of Devonshire having sent Tallien her portrait, enriched with diamonds, he kept the portrait, but returned the diamonds. On revisiting his native country, he discovered that he had lost his wife, as well as the favor of Bonaparte, who was then rising to sovereign power. He appears to have been reduced to distress, but at length obtained, through Fouché and Talleyrand, the office of French consul at Alicant. He died at Paris in 1820. Madame Tallien, having been divorced from her husband (by whom she had a daughter named Thermidor), was married, in 1805, to Joseph de Caraman, prince de Chimay.

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* In answer to some remarks which fell from lord Londonderry concerning prince Talleyrand, in the British house of lords (Oct., 1831), lord Wellington observed, that none of the great measures which had been resolved upon at Vienna and Paris, had been concerted or carried on without the intervention of that illustrious person. "In all the transactions in which I have been engaged with prince Talleyrand, no man could have conducted himself with more firmness and ability in regard to his own country, or with more uprightness and honor in all his communications with the ministers of other countries, than prince Talleyrand. No man's public and private character has ever been so much belied as those of that illustrious individual." Lord Holland added, that no man's private character had been more shamefully traduced,andno man's public character more mistaken and misrepresented, than the private and public character of prince Talleyrand.

Tallow; animal fat melted and separated from the fibrous matter mixed with it. (See *Fat.*) Its quality depends partly on the animal from which it has been prepared, and partly on the care taken in its purification. It is firm, brittle, and has a peculiar heavy odor. When pure, it is white and nearly insipid; but the tallow of commerce has usually a yellowish tinge, and is divided, according to the degree of its purity and consistence, into candle and soap tallow. It is manufactured into candles and soap, and is extensively used in the dressing of leather, and in various processes of the arts. There were exported from Russia, in 1831, 4,091,544 poods (63 to a ton) of tallow. Large quantities are also exported from South America.

Tallow-Tree (*stillingia sebifera*). This interesting tree is a native of China. It belongs to the natural family *euphorbiaceæ.* The branches are long and flexible; the foliage so much resembles that of the Lombardy poplar, that it might readily be mistaken, were the leaves serrated. The flowers are inconspicuous, and disposed in straight, terminal spikes. The capsules are hard, smooth and brown, divided internally into three cells, each containing a nearly hemispherical seed, which is covered with a sebaceous and very white substance. At the close of the season, the leaves turn bright red, and as the capsules fall off, leaving the pure white seeds suspended to filaments, the tree presents a very beautiful appearance. From a remote period, this tree has furnished the Chinese with the material out of which they make their candles. The capsules and seeds are crushed together, and boiled; the fatty matter is skimmed as it rises, and condenses on cooling. The candles made of this substance are very white; and red ones are also manufactured by the addition of vermilion. Sometimes, three pounds of linseed oil and a little wax are mixed with ten of this substance, to give consistence. The tallow-tree is cultivated in the vicinity of Charleston and Savannah, and, indeed, is almost naturalized in the maritime parts of Carolina.

Talma, François Joseph, the greatest tragic actor of France in our day, was born at Paris in 1763, but passed his youth in England, where his father practised as a dentist. He was sent to Paris to complete his studies; and his taste for the theatre was awakened by the dramatic masterpieces and the performances of distinguished actors which he here witnessed. The susceptibility of his temperament showed itself early. While at school, he and some of his companions performed a tragedy, in which he had to describe the last moments of a friend condemned to death by his father: the situation affected him so powerfully that he burst into a flood of tears, which continued to flow for some hours after the conclusion of the piece. After his return to London, Talma associated himself with some other young men, for the purpose of representing French plays, and displayed such brilliant powers as to attract the notice of distinguished individuals, who urged him to appear on the London boards. But circumstances led him to Paris, where he entered the royal school for declamation, and soon after (1787) made his *début* at the *Théâtre Français* in the character of Seide in Voltaire's Mahomet. He was received with applause, and from this moment devoted himself with zeal and perseverance to the study of his art. He sought the society of distinguished literati and artists, studied history for the purpose of becoming acquainted with the manners and customs of nations, and the characters of remarkable individuals, and made himself master of the attitudes, costumes, expression and drapery of the ancient statues. Talma rendered an important service to the French stage by introducing a reform in the costume. (q. v.) The revolution, which now broke out under his eyes, with all its scenes of violence and passion, its displays of exalted virtue, and its excesses of cruelty, contributed to develope his peculiar talent. Chenier's tragedy of Charles IX, or St. Bartholomew's, was brought forward at this time, and Talma studied the character of Charles in history, and his person in medals and portraits, and exhibited them with such truth and life, that his reputation as the first French tragedian was established beyond dispute. The principal parts which he created, or carried to the highest perfection, were Seide, Othello, Hamlet (those of Ducis), Sylla (or rather Napoleon, of Jouy), Regulus, the grand master of the templars, Charles IX, Charles VI (of Delaville), Manlius, and Orestes. He died at Paris in 1826.—See Moreau's *Mémoires sur Talma* (3d ed., 1827). Talma was the author of *Réflexions sur Lekain et sur l'Art théâtral* (1825). "Talma," says madame de Staël, "may be cited as a model of power, and of discretion in the use of it, of simplicity and true grandeur. He possesses all the secrets of the various arts: his attitudes recall to mind the fine statues of antiquity, and the expression of his face, and every look, ought to be the study of our best painters. There is in the voice of this man a magic which I cannot describe; which, from the moment when its first accent is heard, awakens all the sympathies of the heart; all the charms of music, of painting, of sculpture, and of poetry; but, above all, the language of the soul: these are the means which he uses to excite in him who listens, all the effect of the generous or the terrible passions. What a knowledge of the human mind he displays in the manner of conceiving his parts! He is the author himself, come again to realize, by his look, his accents, and his manner, the person he means to present to your imagination." His person is described as regular, but not striking, his voice full and agreeable, his countenance approaching the antique, and full of expression. These physical advantages were combined with a penetrating mind, a warm imagination, deep feeling, and great sensibility. It is well known that he was a great favorite of the emperor Napoleon, who treated him with much distinction, and loved to converse with him. Talma was buried, according to his own directions, without any religious ceremonies; and he likewise left orders that his children should be educated in the Protestant faith; unwilling that they should belong to a church which condemned his profession. His wife, previously known as Mlle. Vanhove, was a distinguished actress. She retired from the stage in 1810.

Talmud (from the Hebrew *lamad*, he has learned); doctrine. It signifies, among the modern Jews, an enormous collection of traditions, illustrative of their laws and usages, forming twelve folio volumes. It consists of two parts, the Mishna and the Gemara. The Mishna is a collection of rabbinical rules and precepts, made in the second century of the Christian era. The whole civil constitution and mode of thinking, as well as language of the Jews, had gradually undergone a complete revolution, and were entirely different, in the time of our Savior, from what they had been in the early periods of the Hebrew commonwealth. (See *Hebrews*, and *Jews*.) The Mosaic books contained rules no longer adapted to the situation of the nation; and its new political relations, connected with the change which had taken place in the religious views of the people, led to many difficult questions, for which no satisfactory solution could be found in their law. The rabbins undertook to supply this defect, partly by commentaries on the Mosaic precepts, and partly by the composition of new rules, which were looked upon as almost equally binding with the former. These comments and additions were called the oral traditions, in contradistinction to the old law or written code. The rabbi Juda, surnamed the *holy*, was particularly active in making this collection (150 B. C.), which received the name of *Mishna* (q. v.) or second law. The later rabbis busied themselves in a similar manner in the composition of commentaries and explanations of the Mishna. Among these works, that of the rabbi Jochanan (composed about 230 A. D.) acquired the most celebrity, under the name of *Gemara* (Chaldaic for *completion* or *doctrine*). This Mishna and Gemara together formed the Jerusalem Talmud, relating chiefly to the Jews of Palestine. But after the Jews had mostly removed to Babylon, and the synagogues of Palestine had almost entirely disappeared, the Babylonian rabbis gradually composed new commentaries on the Mishna, which, about 500 A. D., were completed, and thus formed the Babylonian Talmud.

Talus, in mythology; a brazen image which Vulcan gave to Minos, or Jupiter to Europa. It was endowed with life, and had a single blood-vessel running from the neck to the heel, and closed with a brazen nail. Talus was the protector of Crete, and went three times daily around the island, to defend it against attacks. The fable says that he prevented the enemies of Crete from landing, by heating his body in fire, and then embracing them with his glowing arms. Other stories are also told of him, which seem to indicate that Talus was probably a brazen statue, serving as a beacon, placed by the Phœnicians on a promontory of Crete. Medea, by her arts, eventually destroyed Talus, when she landed with the Argonauts. (q. v.)—Another Talus is mentioned; a son of the sister of Dædalus, who invented the saw, compasses, and other mechanical instruments. His uncle became jealous of his growing fame, and murdered him privately; or, according to some, threw him down from the citadel of Athens. Talus was changed into a partridge by the gods. He is also called *Calus*, *Acalus*, *Perdix*, and *Taliris*.

Tamahama. (See *Tammeamea*.)

Tamarind-Tree (*tamarindus Indica*); a large and beautiful tree of the East Indies, belonging to the natural family *leguminosæ*. The leaves are pinnate, composed of sixteen or eighteen pairs of sessile leaflets, which are half an inch only in length, and one sixth in breadth. The flowers are disposed, five or six together, in loose clusters: the petals are yellowish, and beautifully variegated with red veins. The pods are thick, compressed, and of a dull brown color when ripe. The seeds are flat, angular, hard and shining, and are lodged in a dark, soft, adhesive pulp. The tamarind-tree exists also in Arabia, Egypt, and other parts of Africa; but that of the West Indies is perhaps a different species, distinguished by the shortness of the pods, which contain two, three or four seeds only. In the West Indies, the pods are gathered in June, July and August, when fully ripe; and the fruit, being freed from the shelly fragments, is placed in layers in a cask, and boiling syrup poured over it till the cask is filled: the syrup pervades every part quite down to the bottom; and when cool the cask is headed for sale. The East India tamarinds are darker colored and drier, are more esteemed, and are said to be preserved without sugar. This fruit has an agreeable acid and sweetish taste, is refrigerant and gently laxative. A simple infusion in warm water forms a very grateful beverage, which is advantageously used in febrile diseases. The Turks and Arabs carry the pods, prepared with sugar or honey, either green or ripe, in their journeys across the deserts; and they are found to constitute an agreeable and wholesome article of food.

Tambour; a species of embroidery. The tambour frame is an instrument of a spherical form, upon which is stretched, by means of a string and buckle, or other appropriate means, a piece of silk, muslin, linen, &c., which is wrought with a needle of a particular form, and, by means of silver or gold, cotton or silk, into leaves, flowers, or other figures.

Tambour, in fortification; a piece of work formed of palisades planted close together and driven into the ground, for the purpose of enclosing an open work. Tambours are sometimes erected before the gates of a city, or fortified post.

Tambourine, or **Tambour de Basque**; one of the most ancient musical instruments. Wherever we find Hebrew music mentioned, the tambourine or timbrel also appears. The triumphal song of Miriam, after the passage of the Israelites through the Red sea, shows how early vocal music was accompanied by such instruments and by dancing. The invention of the tambourine, or drum beaten by the hand, would seem naturally to have taken place very early, as it is very simple; and many domestic instruments would easily suggest it. How many objects do children turn into a drum! And, in fact, such instruments are generally found, even among the rudest tribes. The use of the tambourine, on sacred or solemn occasions, has descended to modern times, from the Egyptian feasts of Bacchus. In the Bacchanalian songs of the Mænades, on the Thracian mountains, we find continual mention of the drums (kettle drums and tambourines). In the orgies, only the lyre and the flute were originally permitted to accompany the song; but when, according to the fable, Bacchus himself, attended by Satyrs, Fauns and Bacchanals, appeared at the festivals, they brought with them drums, sistrums, and horns. Those musical instruments which are played on by beating, and hence indicate the rhythm most distinctly, have always been very popular at festivals. Luther translated the Hebrew word *toph* by *Pauke* (drum). In English, it is *timbrel*. The Greeks call it τυμπανον; the Romans, *tympanum*; the Arabians, *deff* (*tambour*, in the East, is the name of the guitar); the Spaniards, *adufe* (a word of Arabic origin, and probably carried, with the instrument itself, by the Moors, to Spain). In the East, it was always played on by maidens at the feast and dance, and therefore cannot be compared to our drum. In the middle ages, we find this instrument mentioned among the many used by the Troubadours and minstrels. In those times, it was called *tambour* and *cloquette*, and appeared in every concert. The present tambourine consists of a wooden or brazen hoop, over which a skin is extended, and which is hung with bells. Sometimes the thumb of the right hand is drawn in a circle over the skin; sometimes the fingers are struck against it. Generally, the hoop has a hole, to give admission to the thumb of the left hand; on this the instrument is supported during the performance, which may be made very graceful by various movements of the body, on account of which the tambourine is generally an attribute of the muse of dancing. The larger tambourine is called *tambour de Basque*, because it is used in Biscay to accompany all the national songs and dances. Steibelt (a German) has recently composed pleasing and brilliant pieces for the pianoforte with the accompaniment of the tambourine.

Tambroni, Joseph, an Italian poet and historian, born at Bologna, in 1773. He studied in the university there; and, in 1794, was elected palæographer, or inspector of the archives of his native city. When the French invaded Lombardy, he attached himself to Marescalchi, whom he accompanied to the congress of Rastadt and to Vienna, as secretary of the Cisalpine legation. On the return of the Austrians to Italy, Tambroni found an asylum in the mountains of Savoy; but he returned after the battle of Marengo and the foundation of the Cisalpine republic. He was then attached to the Italian legation at Paris, under his friend count Marescalchi; and, in 1809, he became consul at Leghorn, and two years after at Rome. On the fall of the imperial government, in 1814, he retired from public life, and engaged in conducting the *Giornale Arcadico*. Tambroni died at Rome, in 1824. Among his works are *Compendio delle Storie di Polonia* (2 vols.), *Intorno alla Vita di Canova*, besides many letters and poems.

Tambroni, Clotilda, sister of the preceding, distinguished for her acquaintance with Greek literature, was born in 1758, and, from her early years, displayed an invincible attachment for study, in consequence of which her parents afforded her the means of instruction. She was admitted into the Arcadian academy at Rome, the Etruscan academy at Cortona, and the Clementine at Bologna; and, in 1794, the professorship of the Greek language was bestowed on her, which she retained till 1798, when she was displaced because she refused to take the oath of hatred to royalty, required by the laws of the Cispadane republic. She was afterwards restored by Bonaparte; but the Greek professorship being at length suppressed, she retired to the bosom of her family. Her death happened June 4, 1817. Her works consist chiefly of poems written in Greek, among which is an elegy in honor of Bodoni, the celebrated printer.

Tamerlane. (See *Timour*.)

Tammeamea, or **Tamahama**, king of the Sandwich isles, in the Pacific ocean, was one of those individuals who are destined to produce a great effect on the state of society around them. He belonged to the race of the native chiefs; and at the death of captain Cook, in 1780, he had arrived at manhood; but he had no concern in that event. Tirrioboo, the king of Hawaii, the largest of the Sandwich islands, having offended his principal officers, he was put to death, and Tammeamea was chosen to succeed him. He soon showed extraordinary talents for his situation; and it was a part of his policy to encourage the settlement of European mariners and others in his dominions. When captain Vancouver visited Hawaii, Tammeamea put himself under the protection of that officer, as the representative of the king of Great Britain; and, as the price of his submission, he was assisted in building a fine vessel, which afforded a model for the construction of several more. Tammeamea thus formed a fleet, with which he conquered the adjoining islands, and traded to China. He subsequently erected a fort on the island of Oahoo, and obtained from the Russians some artillery; while, by encouraging the trading of his subjects with navigators, he added to his own wealth and importance as well as that of his people. This enterprising monarch died in March, 1819. Rhio Rhio, the son and successor of Tammeamea, having made a visit to England, together with his queen, in 1824, both their majesties died in London, after a few months' residence, in consequence of a disease arising from change of climate and habits of life.

Tan, Tana, Tania; an ending common to a great many names in the Oriental languages, as well as those of Europe, signifying *country* or *place possessed by*; *Mauritania* (country of the Moors).

Tanais. (See *Don.*)

Tancred, with Godfrey of Bouillon, the soul of the first crusade, was born in 1078. History gives us no information concerning his father, a Sicilian or Italian marquis; but his mother was the sister of the celebrated Norman, Robert Guiscard, whose eldest son, Bohemond, was the friend and brother in arms of Tancred. (See *Guiscard.*) In 1096, the two heroes embarked for Epirus, and thence marched to Macedonia. Tancred was present in the van or the rear, wherever danger was to be found, and more than once saved the army from destruction in the snares of the Greeks. On the plains of Chalcedon he united his forces with those of Godfrey; and here they formed that compact which Tasso has celebrated in his Jerusalem Delivered. At the siege of Nice (1097), Tancred first appears among the heroes who directed the course of events, and in the battle of Dorylæum, in which his younger brother fell, he saved the army of the crusaders, when surrounded by 200,000 Seljooks. Godfrey's brother Baldwin and Tancred now advanced over the Taurus towards Jerusalem, a distance of nearly 1000 miles, through an unknown and desolate region, for the purpose of exploring the route. Tancred first penetrated through the passes of the mountains, and obtained possession of Tarsus by capitulation. Baldwin followed him, and was faithless enough to take possession of the town ostensibly for his brother, but virtually for himself. Tancred, though exasperated at this act of treachery, nobly exclaimed, "Shall I stain my lance with the blood of my brethren?" and, advancing to Memistra, took the place by storm. Baldwin attempted to repeat his perfidious act, and Tancred now suffered himself to be so far carried away by his resentment, as to turn his arms against him; but the quarrel terminated in the reconciliation of the chiefs. Tancred next marched against Antioch, the capture of which was delayed seven months, by the diseases, want of provision, and insubordination, which prevailed in the Christian army. The garrison left by the Crusaders in the city, was surrounded by a Persian army, which was defeated by Tancred. After Easter, in 1099, the crusaders set forward for the conquest of Jerusalem. Tancred took Bethlehem, and pressed forward to be the first to see the walls of the holy city. Immediately after his arrival before Jerusalem, he captured an advanced work, which is still called *Tancred's tower*. During the scenes of horror which attended the capture of Jerusalem (July 19, 1099), he conducted himself with humanity, and saved the lives of thousands of the enemy, at the peril of his own. For this he was accused of being an enemy to the priests and to religion! The sultan of Egypt was now advancing to attempt the recovery of Jerusalem, but was totally defeated by Tancred, with the loss of his camp, before Ascalon (August 12). Tancred captured Tiberias, besieged Jaffa, and, after the death of Godfrey, endeavored to effect the election of Bohemond as king of Jerusalem; but the unworthy Baldwin obtained the throne, and Tancred, while engaged in the field against the emir of Damascus, was summoned to appear before the new king, on a charge of rebellion. But, secure in the attachment of his vassals, Tancred, now prince of Galilee, despised the base arts of Baldwin, and hastened to Antioch, whose prince, Bohemond, had been captured by the Turks. The city was equally threatened by the Turks and the false Greeks; but Tancred alternately made head against both, restored his friend to liberty, and, with the utmost disinterestedness, gave him back his territories. When Bohemond returned to Europe to obtain recruits, Tancred was left to protect Antioch, which was menaced at once from Aleppo and by the Greek armies. He was even obliged to encounter the attacks of Baldwin, count of Edessa, and Josselin de Courtenay. Bohemond died at Salerno, and his soldiers either dispersed or entered the service of the Greek emperor: still Tancred succeeded in forcing the Turkish sultan to retreat over the Euphrates. This was his last exploit. He died soon after, in 1112, in his thirty-fifth year. Tancred was the flower and pattern of chivalry. Tasso has immortalized him.—An account of his life may be found in Raoul de Caen's *Gestes de Tancrède*, and in Delabarre's *Histoire de Tancrède* (Paris, 1822).

Tangent, in general; every straight line which has one single point in common with, and lies entirely outside of, a curve (at least of every such curve as can be cut by a straight line in two points only). This is the geometrical tangent. In trigonometry, the name is applied particularly to that part of the tangent to the circle which stands perpendicular at the end of one of the radii, including a particular arc, and is cut by the prolonged radius passing through the other end of the arc (the *secant*). Trigonometrical tangents, used with the sine and cosine, &c., for the solution of triangles (see *Trigonometry*), have been calculated according to their relative value (i. e. with reference to a radius of a certain magnitude) for every arc; and these relative values, or their logarithms, are generally to be found in the trigonometrical tables, with the sines and cosines of the same arcs. How this calculation of trigonometrical tangents, in reference to sines, cosines and radii, is performed, may be easily understood by a mere comparison of the two similar triangles which originate when we draw these lines and the corresponding arc. The differential calculus gives a very simple method for calculating the tangents by means of the subtangents, under the name of the *direct method of the tangents*. To this direct method the higher analysis adds an inverted method, called the *inverse method of tangents*.

Tangential Force. In order to have a clear idea how the planets are made to revolve in consequence of the attraction which the sun, situated in one focus of their elliptical orbits, exercises upon them, we may imagine that they originally received an impulse urging them forward in a straight line. With this impulse the attraction of the sun (centripetal force; see *Central Forces*) being united, the planet was thus made to describe the diagonal of a parallelogram, whose sides represent the directions of these forces. As there is nothing to diminish the impulse which we have supposed originally given to the planet, it would continue its path in the direction of the diagonal; but the centripetal force, operating continually upon the direction which the planet has obtained, makes it change its direction incessantly. In this way originates (as a diagram, drawn according to what we have said, clearly shows) a motion around the centre of forces. (See *Circular Motion*, and *Central Forces*.) The planet has at each point of its path a certain tendency (the consequence of its previous motion; hence, properly speaking, the effect of its inertness) to continue its last received diagonal direction, and thus to recede from the centre of forces. To this tendency, the centripetal force, directed towards this point, is opposed. The centripetal force may again be divided into two forces, the first of which (the normal force) operates perpendicularly to the orbit, and only contributes to retain the planet in the same, in order to prevent the curved motion from degenerating into a straight one: the latter, however, coincides with the direction of the orbit itself, and, therefore, only affects the velocity. This latter force is the tangential force, so called because the element of the curve coincides with the tangent. The doctrine of central forces is so important, because our imagination, unaided by theory, is almost incapable of conceiving a body which turns around another, exercising an attraction upon it, yet without ever coming in contact with the attracting body. But what has been said shows that a correct proportion of the centripetal force to the original impulse renders the contact of the body with the sun impossible. Generally, the endeavor of the planet to recede from the centre of forces, is called the *centrifugal* force; but can we, properly, call that a force which is evidently the effect of inertness? The original impulse may be compared to the first impulse which sets the pendulum in motion; after which, if we omit other influences, it would continue its oscillations for eternity, from the mere influence of gravity.

Tangier, or Tanjah (anciently *Tingis*); a town of Morocco, situated at the west entrance of the straits of Gibraltar, thirty-eight miles south-west of Gibraltar; lon. 5° 50′ W.; lat. 35° 48′ N. The population is about 7000. Tangier was possessed by the English from 1662 to 1784. It afterwards became a distinguished station for piracy; but the disuse of this practice in Morocco has diminished the importance of the town. It now subsists chiefly by supplying the British garrison of Gibraltar with cattle and vegetables. The bay of Tangier is not safe when the wind is in the west, having been encumbered by the ruins of the mole and fortification; the cables are liable to be torn, and the ships to be driven on shore. Tangier, viewed from the sea, presents a pretty regular aspect; but within it exhibits the most disgusting wretchedness. It is the residence of the European and American consuls.

Tannin; a peculiar vegetable principle, so named because it is the effective agent in the conversion of skin into leather. The oak and its products—gall-nuts, &c.—contain two kindred matters, tannin and gallic acid, which seem, by the powers of vegetation, mutually convertible. The former is supposed to be characterized by its forming, with gelatine, a flexible and unputrefiable compound; and by forming with oxide of iron a black combination, which, having a strong affinity for cotton, linen, silk and wool, is much used by the dyer. Hitherto, tannin has been found only in perennial plants, and chiefly in the more durable parts of these. The barks of almost all trees and shrubs contain it, principally in the parts nearest the wood, because in the outer coats it is changed by the air. It has never been met with in the poisonous plants, nor in such as contain elastic, resinous and milky juices. Decoction of nutgalls contains tannin with a little gallic acid, some tannates and gallates of potash and lime, tannin altered into the matter commonly called *extractive*, and lastly a compound (insoluble in cold water) of tannin with perhaps some pectic acid, which is found especially in the extract of oak bark. The purification of tannin, or its separation from the principles with which it occurs, may be effected as follows:—Mix a filtered infusion of nutgalls with a concentrated solution of carbonate of potash, as long as a white precipitate falls, but no longer, because the precipitate is redissolved by an excess of alkali. The precipitate must be washed on a filter with ice-cold water, and afterwards be dissolved in dilute acetic acid, which removes a brown matter from it. This matter is extractive, formed, during the washings, by the action of the air. After filtering the solution, the tannin is to be precipitated by acetate of lead; and the precipitate is to be well washed, although in this operation its color passes from white to yellow, and it is to be then decomposed by sulphureted hydrogen. The filtered liquor is colorless, and leaves, by evaporation *in vacuo* over potash, tannin in hard, light-yellowish, and transparent scales, which, when exposed to the air, and particularly to the sunbeam, assume a deeper yellow color. It is not deliquescent; dissolves in water with the greatest facility, and may be readily reduced to powder. Exactly saturated compounds of tannin with acids have no sour taste, but a purely astringent one. In the pure state, they are usually very soluble in water, and cannot be precipitated from it except by a great excess of acid. Tannin forms, with the salifiable bases, very remarkable compounds: that with potash or ammonia in the neutral state is but slightly soluble in cold water, and may be precipitated in the form of a white earth: it dissolves in boiling water, and separates from it, on cooling, in the shape of a powder, which, when drained on a filter, pressed and dried, has quite the aspect of an inorganic earthy salt, and is permanent in the air. The compound with soda has the same appearance; but it is much more soluble. It is known that tannin precipitates solution of tartar emetic. This precipitate is remarkable from a portion of the tannin taking, in the salt, the place of the oxide of antimony.

Proportion of Tannin in different vegetable Products.

Substances.	In 480 parts.	In about 8 oz.	In 100 parts.
White inner bark of old oak,	72	—	21
" " " young oak,	77	—	—
" " " Spanish chestnut,	63	30	—
" " " Leicester willow,	79	—	—
Middle bark of oak,	19	—	—
" " Spanish chestnut,	14	—	—
" " Leicester willow,	16	—	—

Substances.	In 480 parts.	In about 8 oz.	In 100 parts.
Entire bark of oak,	29	—	—
“ “ Spanish chestnut,	21	—	—
“ “ Leicester willow,	33	109	—
“ “ elm,	13	28	—
“ “ common willow,	11	—	—
Sicilian sumach,	78	158	—
Malaga sumach,	79	—	—
Souchong tea,	48	—	—
Green tea,	41	—	—
Bombay catechu,	261	—	—
Bengal do.	231	—	—
Nutgalls,	127	—	46
Bark of oak cut in winter,	—	30	—
“ beech,	—	31	—
“ elder,	—	41	—
“ plum-tree,	—	58	—
Bark of the trunk of willow,	—	52	—
“ “ sycamore,	—	53	—
Bark of birch,	—	54	—
“ cherry-tree,	—	59	—
“ poplar,	—	76	—
“ hazel,	—	79	—
“ ash,	—	82	—
Oak cut in spring,	—	108	—
Bark of alder,	—	—	36
“ weeping willow,	—	—	16
“ Virginian sumach,	—	—	10
“ green oak,	—	—	10
“ rose chestnut of America,	—	—	8
“ sumach of Carolina,	—	—	6

The most important property of tannin, among those above mentioned, is that displayed in its relation to animal gelatine. They combine with much facility, forming, from a state of solution, a soft, flocculent precipitate, which, on drying, becomes hard and brittle: this has been called *tanno-gelatine*. The combination is not always established in the same proportions, but varies according to the concentration of the solutions and the relative quantities of the substances; nor is the compound in all cases insoluble in water. When the gelatine is only slightly in excess, it consists of 54 gelatine and 46 tannin: when there is a large excess of gelatine, the compound is redissolved. On the formation of this combination, the art of *tanning* depends. The skin of an animal, when freed from the hair, epidermis and cellular fibre (which is done principally by the action of lime), consists chiefly of indurated gelatine. By immersion in the tan liquor, which is an infusion of bark, the combination of the tannin with the organized gelatine, which forms the animal fibre, is slowly established; and the compound of tannin and gelatine not being soluble in water, and not liable to putrefaction, the skin is rendered dense and impermeable, and not subject to the spontaneous change which it would otherwise soon undergo. To render it equal throughout the whole substance of the skin, the action of the tan liquor must be gradual; and hence the tanning is performed by successive immersions of the skin in liquors of different strength. Sir H. Davy observes, that leather, slowly tanned in weak infusions of bark, appears to be better in quality, being both softer and stronger than when tanned by dense infusions; and he ascribes this to the extractive matter which they imbibe. This principle, therefore, affects the quality of the material employed in tanning; and galls, which contain a great deal of tannin, make a hard leather, and liable to crack, from their deficiency of extractive matter. Hides increase in weight during the process of tanning from one fifth to one third.

TANNING is a mechanical art, by which the hides and skins of various animals, particularly those of neat cattle, are converted into sole leather, upper leather, harness, &c., by being cleansed of the hair and flesh, and saturated with the tannin contained in the bark of the oak, hemlock, and some other kinds of forest trees. It is a simple process to make leather of hides and bark, but probably one of the most critical of manufacturing operations to make the most and the best leather that can be made from a given quantity of hide. The process is long and laborious. Time and labor are both materially reduced, and the quantity and weight of the leather increased, by various improvements, which commenced in the year 1803, in Hampshire county, in Massachusetts. The improvements above alluded to are the substitution of water power for manual labor, in many of the most laborious parts of the process; viz. to soften and cleanse the hide preparatory to the bark being applied to it; to grind the bark; to move pumps for transferring the decoction of the bark from one vat to another (much of which is necessary to be done daily in an extensive tannery), and to roll the leather preparatory to its being sent to market; also the least possible quantity of lime is now used to facilitate getting off the hair: this has been found greatly to add to the weight and quality of the leather. The application of heat to bark in leaches is found to be very important, and more particularly the application of the decoction (usually termed *liquor*) to the hide, rather than the bark, which had been commonly employed. In 1829, 36,260 sides of sole leather were tanned in one establishment in the town of Hunter, Greene county, New York. They weighed 637,413 pounds, and were manufactured with the labor of forty-nine hands, and with 3200 cords of bark. The tannery has seven powerful water-wheels adapted to its various machinery. Slaughter hides averaged fifty-six and a half pounds of sole leather from one hundred of hide: best South American dry hides gained sixty-one per cent. in weight, and ordinary ones in proportion.—Tanning is a chemical process; and undoubtedly the art will go on improving with the progress of chemical science and the diffusion of chemical knowledge.

Tansy (*tanacetum vulgare*). This plant is now naturalized, and pretty common in many parts of the U. States. It grows in beds by road sides, and in waste places. The stems are upright, branching, and about two feet high; the leaves doubly pinnate, and incisely serrate, and of an agreeable aspect. It belongs to the *compositæ*. The flowers are yellow buttons, disposed in a large, upright corymb. The whole plant has a strong and penetrating odor, agreeable to some persons, and an extremely bitter taste. It contains an acrid volatile oil, is stimulant and carminative, and the decoction and seeds are recommended as anthelmintic and sudorific. The young leaves are shredded down, and employed to give color and flavor to puddings; they are also used in omelets and cakes, and those of the curled variety for garnishing.

Tantalite. (See *Columbite.*)

Tantalum. (See *Columbium.*)

Tantalus, son of Jupiter, and king of Sipylus, in Phrygia, was a favorite of the gods, who often visited him, until he forfeited their favor by his arrogance. Tradition does not agree as to his crime. According to one account, he offended Jupiter by his perfidy; according to another, he stole away the nectar and ambrosia from heaven; and a third story is, that he murdered his own son Pelops, and served him up for some of the gods. The same diversity prevails in regard to his punishment. He is sometimes described as having a large stone suspended over his head, which constantly threatens to fall and crush him, and from which he cannot flee. But the more common account represents him as standing up to his throat in water, with the most delicious fruits hanging over his head, which, when he attempts to quench his burning thirst or to appease his raging hunger, elude his grasp. From this fable comes the English expression to *tantalize*.

Tapestry; a kind of woven hangings of wool and silk, frequently raised and enriched with gold and silver, representing figures of men, animals, landscapes, historical subjects, &c. This species of curtain-covering for walls was known among the inhabitants of Eastern countries at an extremely remote era. The most grotesque compositions and fantastic combinations were commonly selected for the display of the talents of workmen in this department of Oriental art, which was afterwards imported into Greece. From these compositions the elegant Greeks are supposed, by Böttiger, to have taken their ideas of griffins, centaurs, &c. At length the refined taste of Athens became visible in the structure of tapestries. The old grotesque combinations no longer, as formerly, covered their surfaces, but were confined to the borders only; and the centre received more regular and systematic representations. In modern times, this description of embroidery has been executed with very great success, and has often employed the talents of the greatest masters in the art of painting. In Flanders, particularly at Arras (whence the term *arras*, signifying *tapestry*), during the fifteenth and sixteenth centuries, the art was practised with uncommon skill; and tapestries were executed there after the masterly designs of Raffaelle in his cartoons. (q. v.) This art was introduced into England by William Sheldon, near the end of Henry VIII's reign. In 1619, a manufacture was established at Mortlake, in Surrey, by sir Fras. Crane, who received £2000 from James I, to encourage the design. The first manufacture of tapestry at Paris was set up under Henry IV, in 1606 or 1607, by several artists whom that monarch invited from Flanders. But the most celebrated of all the European tapestry manufactures was that of the Gobelins (q. v.), instituted under Louis XIV, which sent forth very beautiful cloths, remarkable for strength, for elegance of design, and happy choice of colors. The finest paintings were copied, and eminent painters employed in making designs. For a long while Gobelin tapestry was the most costly and favorite method of hanging the walls of chambers. The texture of tapestry is in many respects similar to that of the finer carpetings; but the minuteness of the constituent parts causes the sight of the texture to be lost in the general effect of the piece. (See *Carpets*, and *Hautelisse*.)

Tapeworm, one of the most stubborn worms which infest the bowels of beasts, and also of man, has its name from the broad, flat, ribbon-like appearance of each articulation and of the whole body, which is composed of these articulations. Bremser makes two species—*tænia* and *bothryocephalus*—both of which were formerly united in one species, under the name of *tænia*. One kind of both species appears in the human body; namely, 1. *tænia solium*, the single or long-limbed chainworm, in which the organs of generation are found on one side of every articulation; it is the kind most commonly met with in Germany, France and England; 2. *bothryocephalus latus*, the proper or broad tapeworm, in which the sexual organs are found on the flat side of the articulations. It is met with only in Russia, Poland, Switzerland, and some parts of France, and causes little pain. Both kinds often reach the length of twenty or thirty feet, and usually only detached parts pass from the body, but not that which has the head; before this has passed away, the worm reproduces itself, and, moreover, what was formerly doubted, several tapeworms are often met with in one intestinal canal. The symptoms of the tapeworm are a peculiar, sudden sensation of pricking in the stomach, oppression, and undulatory motions in the abdomen, anxiety, cramps, swoons, &c.; but all these symptoms are uncertain, and only the actual passing of pieces of the worm from the body is a certain proof of its existence. The cure is difficult, and requires an experienced physician.

Tapioca. (See *Manioc*.)

Tapir. The American tapir, when full grown, is six feet in total length, and about three and a half in height. In general form it resembles the hog; but the legs are rather longer in proportion, and the nose is prolonged into a small movable proboscis. The fore feet have four toes, and the hind ones three only. The eyes are small and lateral, and the ears long and pointed; the skin thick, and covered with scattering, short, silky hairs; the tail short, and slightly hairy. The teeth resemble those of the horse. It is the largest animal of South America, and is found in all parts of that continent, though most abundant in Guiana, Brazil and Paraguay. It shuns the habitations of men, and leads a solitary life in the interior of the forests, in moist situations, but selects for its abode a place somewhat elevated and dry. By travelling always the same rounds, it forms beaten paths, which are very conspicuous. It comes out only in the night, or during rainy weather, and resorts to the marshes. Its ordinary pace is a sort of trot; but it sometimes gallops, though awkwardly, and with the head down, and, besides, swims with facility. In the wild state, it lives on fruits and young branches of trees, but when domesticated, eats every kind of food. Though possessed of great strength, it makes use of it only for defence; and its disposition is mild and timid. The flesh is dry and disagreeably tasted; but the skin is very tough, and might be applied to useful purposes. The Indian tapir has only been discovered within a few years. It inhabits Sumatra, Malacca, and some of the surrounding countries. The colors are remarkable. The head, neck, feet and tail are black; the rest of the body and tip of the ears white.

Taprobana (with the ancients); the name of Ceylon.

Tar; a well known substance obtained chiefly from the pine by burning in a close, smothering heat. Some of the unctuous species of bitumen are also called *mineral tar*. (See *Bitumen*.) The tar of the north of Europe is superior to that of the U. States, on account of the latter being prepared from dead wood, while the former is procured from trees recently felled. The mode practised in the Scandinavian peninsula is precisely that described by Theophrastus and Dioscorides, as in use in ancient Greece. A conical cavity is made in the ground, with a cast-iron pan at bottom, from which leads a funnel. The billets of wood are thrown into this cavity, and, being covered with turf, are slowly burnt without flame. The tar which exudes during combustion is conducted off through the funnel abovementioned into barrels, which are immediately bunged, and fit for exportation.

Tar River. (See *Pamlico*.)

Tarantula. (See *Appendix*.)

Tare is an allowance for the outside package, that contains such goods as cannot be unpacked without detriment; or for the papers, threads, bands, &c., that enclose or bind any goods imported loose, or which, though imported in casks, chests, &c., yet cannot be unpacked, and weighed net.

Tarentum (Ταρας); an old Greek colony in Lower Italy, founded by Lacedæmonian Parthenii, 700 B. C. It was one of the most flourishing and powerful cities of Magna Græcia, and for a long time defended its freedom against the attacks of the Romans. It was also distinguished for luxury and splendor. Pythagoras found many disciples here, and the fine arts were encouraged. Archytas, a mathematician, was a Tarentine. The city was taken by the Romans B. C. 272. The harbor of the modern Taranto is choked up with sand; but the place has some trade, and a population of 14,000 souls. Marshal Macdonald received his title of duke of Tarentum from this place.

Tarentum, Duke of. (See *Macdonald*.)

Targum (*interpretation, translation*); a Chaldee version of the Old Testament. After the Babylonish captivity, the ancient Hebrew had gradually become unintelligible to the common people (see *Hebrew Language*, and *Jews*); and it therefore became necessary to read or explain the Scriptures in the synagogues in the vulgar language of the country. The oldest Targum is that of Onkelos, which comprises only the pentateuch; the second, or that of Jonathan, is a version of the prophets. These are supposed to have been written about the time of our Savior. The third targum is also a version, or rather a paraphrase of the law, accompanied with many glosses and fables. The fourth, likewise of the law, is called the "Jerusalem targum," because it is in the Syro-Chaldaic language, which was spoken at Jerusalem. The fifth is a paraphrase of the *megilloth* (Ruth, Esther, Ecclesiastes, Solomon's Song, Lamentations); the sixth, of Esther; the seventh, of Job, the Psalms and Proverbs; and the eighth, of the Chronicles. These six are of later origin and less value than the two first mentioned. Several of the targums are contained in the polyglot Bibles. (See *Polyglot*.)

Tariff, or Tarif; first a list of certain merchandises; then a list of duties on imports and exports. This word, like many others used in commerce, is derived from the Italian, in which it is *tariffa;* this again comes, like several other expressions relating to commerce or navigation, from the East. In Persian, it is *tarif*. In Arabian, the verb *arf* signifies to *know*, which in the second form becomes *tarif*, signifying to *make known*. The substantive derived from the verb therefore signifies *notification*.

Tarleton, general, is the son of a merchant of Liverpool, into whose counting-house he was introduced; but a regiment being raised in that town, Mr. Tarleton quitted the pen for the sword, and took a commission in that regiment, in which he soon rose to the rank of captain. In America, he very much distinguished himself by his courage, and was allowed to raise a corps of horse and foot, called a *legion*. He then obtained the rank of lieutenant-colonel. In this capacity he distinguished himself for his intrepidity as a partisan; but a defeat which he met with from the American general Sumter, did not speak much in favor of his talents as a general. On his return, he published a History of the Campaign in the Southern Provinces of America, in which he endeavored to justify his conduct. At the peace, he went on half-pay. He had, however, the good fortune to be introduced to, and favored with the confidence of, the heir-apparent, of whom he was, for some time, a constant companion. He also, by the interest of his family, obtained a seat in parliament, for his native place, Liverpool, and while in the house, he warmly entered into the opposition, with whom the prince then acted. While a member, he published a Speech intended to have been spoken; and, in 1810, a Speech, which he did speak. He has risen regularly in the army to the rank of general, and to the command of the eighth regiment of dragoons, and to be governor of Berwick. General Tarleton married a lady of the Bertie family, which has connected him with the houses of Cholmondeley and Salisbury.

Tarn; a department of France. (See *Department.*)

Tarn et Garonne; a department of France. (See *Department.*)

Taroc; a game at cards, perhaps the most interesting, but also the most difficult. It is played with seventy-eight cards, and derives its name from the twenty-two trumps or *tarocs* in it, the most important of which is the *excuse*. If cards, as is said, are an invention of the Arabians, and carried by them to Spain, or by the crusaders to Italy, &c., the French and German cards, and the games founded on them, must be explained from national customs; but the taroc would seem to have remained in a great degree faithful to its Oriental origin. The difference between the taroc-cards and the common French consists in those twenty-two tarocs and four others, between the queen and knave, called *cavals*.

Tarpawling; a broad piece of canvass, well daubed with tar, and used to cover the hatchways of a ship at sea, to prevent the penetration of the rain or sea-water which may at times rush over the decks.

Tarpeia, the daughter of Tarpeius, the governor of the citadel of Rome, promised to open the gates of the city to the Sabines, provided they gave her their gold bracelets, or, as she expressed it, what they carried on their left hands. The Sabines consented, and, as they entered the gates, threw not only their bracelets, but their shields, upon Tarpeia, who was crushed under the weight. She was buried in the capitol, which, from her, was called the *Tarpeian rock*; and there Roman malefactors were afterwards thrown down a deep precipice.

Tarquinius, Lucius, surnamed *Priscus*, or the *Elder*, fifth king of Rome, was the son of a merchant of Corinth, who settled at Tarquinii, in Etruria. His wife, Tanaquil, urged him to repair to Rome, where he ingratiated himself both with the king Ancus Martius and the people; and the former conferred on him the guardianship of his two sons. These he superseded on their father's death, and procured the suffrages of the people for himself. His first step was to admit two hundred plebeians into the senate; after which he engaged in a war with the Latins, and, having finally defeated a confederacy between them and the Sabines and Etrurians, obliged them to sue for peace. For this success, he was honored with a triumph; and he employed the spoils of war in erecting the Circus Maximus. (See *Circus.*) A confederacy of all the Etrurian tribes against the Romans followed, which, after a war of nine years' duration, terminated in the Etrurians acknowledging him for their sovereign. Tarquin enclosed the city with walls, and constructed those celebrated sewers, which, even at the summit of the Roman splendor, were viewed with admiration. (See *Cloacæ.*) A new war breaking out with the Sabines, he obliged them to purchase peace by the surrender of all their fortresses. Tarquin, who had vowed a temple to Jupiter, Juno and Minerva, now commenced it on the Tarpeian rock, and thus founded the principal seat of the Roman religion. (See *Capitol.*) He had reached his eightieth year, when the sons of Ancus procured his assassination (B. C. 576). Tanaquil kept his death a secret until the succession was secured to her son-in-law.—*Servius Tullius Tarquinius*, named *Superbus*, or the *Proud*, is supposed to have been grandson to Tarquinius Priscus. Servius Tullius married his two daughters to the brothers Aruns and Tarquin; the latter of whom was violent and ambitious, while his brother was mild and unaspiring. Their characters were reversed in their respective wives. The tragical deaths of Aruns and the wife of Tarquin, and a criminal union between the latter and his sister-in-law Tullia, followed, and, finally, the murder of Servius, and the accession of Tarquin to the sovereignty, B. C. 534. He supported his usurpation by a band of foreign mercenaries; many of the senators went into banishment, and the plebeians found the yoke press as hardly on themselves. He undertook a war against the Volscians, as also against the Sabines, and was victorious in both instances. Returning to Rome, he twice triumphed, and employed the idle populace in finishing the great circus and sewers commenced by his grandfather. It was in the reign of this Tarquin that the Sibylline books were brought to Rome, where they were for many years resorted to for the purposes of superstition or state policy. Brutus (q. v.), taking advantage of the anger of the people by the unhappy fate of Lucretia (q. v.), procured a decree for the banishment of Tarquin and his sons; and the king, at the age of seventy six (B. C. 509), was obliged to abandon his capital, and take refuge in Etruria. The Tarquins interested some of the neighboring states in their favor, and Porsenna, king of the Clusini, an Etrurian tribe, invested Rome in their behalf, but, discovering treachery in their conduct, renounced their cause. The Latins also took arms in their favor; but the new republic finally triumphed over all its enemies. Tarquin at length, having seen all his sons perish in the field, retired to Cumæ, where he died in the ninetieth year of his age, and the fourteenth of his exile. (For a critical examination of the history of the Tarquins, as here given, see Niebuhr's *History of Rome.*)

Tarragona (anciently *Tarraco*); a town in Spain, in Catalonia; lon. 1° 15′ E.; lat. 41° 9′ N.; population, 7500. It is situated on the coast of the Mediterranean, surrounded with walls and turrets, and has a magnificent Gothic cathedral. Under the Romans, it was the capital of the province Tarraconensis, and was, at one time, one of the chief cities of Spain. In 516, a council was held here. It was besieged and sacked, in 1811, by the French, under marshal Suchet.

Tarras. (See *Cements.*)

Tarsus, an ancient city of Asia Minor, the capital of Cilicia, is said by Strabo to have been founded by Sardanapalus. It was adorned by a number of magnificent temples, as well as with a gymnasium and theatre. Its inhabitants enjoyed the privileges of Roman citizens, and the city rose to such distinction as to rival Athens, Antioch and Alexandria in wealth and grandeur, as well as in the arts and sciences. It is venerable as the birth-place of St. Paul. It is now a poor village.

Tarsus of Birds. (See *Ornithology.*)

Tartaglia; a mask in the Neapolitan comedy.

Tartar, Cream of. (See *Cream of Tartar.*)

Tartaric Acid. This acid, as it exists in vegetables, is usually combined with potash, forming a salt with an excess of acid—the super-tartrate or bi-tartrate of potash. This salt is deposited in considerable quantity from the juice of the grape during its conversion into wine, or rather from the wine during the slow fermentation which it suffers in the cask. It does not appear to be a product of the fermentative process, but exists before this in the juice of the grape, and is merely separated. It also exists in other fruits, particularly in the tamarind, of which it forms a considerable part. As deposited from wine, it is impure, having mingled with it coloring matter and tartrate of lime. In this state, it forms the crude tartar of commerce, named *white* or *red tartar*, according to its color. It is purified by boiling it in water, with the addition of a small quantity of fine clay, which attracts the coloring matter. By evaporation, it is obtained crystallized, forming the purified tartar, crystals, or cream of tartar of the shops. From this salt the tartaric acid is obtained, by adding to a solution of the super-tartrate of potash in boiling water, carbonate of lime in powder, as long as any effervescence is excited: the tartrate of lime which is formed and precipitated, being well washed, is decomposed by adding sulphuric acid equal in weight to the chalk that had been employed, previously diluted with half its weight of water, digesting them with a moderate heat: the sulphuric acid combines with the lime, and forms the sulphate, which, being of sparing solubility, is separated, while the tartaric acid is dissolved by the water, and, by evaporation, is obtained in a crystallized form. The crystals are tables or prisms, white, and nearly transparent. Their taste is sour, and they deeply redden vegetable blues. They are very soluble in water, and form a solution so concentrated as to have an oily appearance. By the action of very strong nitric acid, tartaric acid is converted into oxalic acid. The crystals are composed of acid 66 and water 9 in 75 parts. The acid appears to be composed of

Hydrogen, ...	4.48
Carbon, ...	35,82
Oxygen, ...	59.70
	100.00

Tartaric acid is decomposed by heat, affording, among other products, a white sublimate, which is a peculiar acid, named, from its origin, *pyro-tartaric acid*, which has been regarded by some as acetic acid disguised by the addition of a little oily matter. Tartaric acid combines with the alkalies and earths, forming salts named *tartrates*. The acid appears to have a peculiar tendency to enter into combination with more than one base, and to form ternary salts. It has also a tendency to form salts with an excess of acid, in uniting with those bases, with which it forms soluble compounds. Tartrate of potash is usually formed by neutralizing the excess of acid in the bi-tartrate, by the addition of carbonate of potash. From its affinity to water, it is not easily crystallized, but, by a slow evaporation, affords four-sided prisms. It is deliquescent in a humid atmosphere, and very soluble in water, whence its name, also, of *soluble tartar*. Tartrate of soda is soluble and crystallizable. A triple salt, the tartrate of potash and soda, formerly named *Rochelle salt*, is formed by neutralizing the excess of acid in the super-tartrate of potash, by adding carbonate of soda. It crystallizes in rhomboidal prisms, soluble in five parts of water. Tartaric acid acts on some of the metals, and it may be combined with the oxides of all of them by double affinity. By employing the bitartrate of potash to act on these oxides, ternary compounds are obtained. The most important of these is that formed with the oxide of antimony. It has long been known, in medical practice, under the name of *tartar emetic*, as one of the mildest and most manageable of the antimonial preparations. It is prepared by boiling three parts of the brown oxide (obtained by deflagrating sulphuret of antimony with nitre) with four parts of bitartrate of potash in 32 parts of water for half an hour: the solution, when strained, is set aside to crystallize.

Tartarus, in the earliest mythology of the Greeks; the kingdom of the dead, the infernal regions in general, or the realm of the subterranean Jupiter—Pluto. (See *Cemetery*.) At a later period, it was limited to that part of the infernal regions in which the Titans and the damned were confined. It was represented as a dark and gloomy region, surrounded by a triple wall, and encircled by the fiery river Phlegethon, Cocytus, the stream of lamentation, and Acheron. We find a description of Tartarus in Hesiod, one of the earliest Greek poets; and Virgil (*Æn.* vi, 577) paints the horrors of the place. Here lay the monstrous Tityos (who attempted to violate Latona), stretching over nine acres, while two vultures incessantly gnawed his liver; here Sisyphus rolled a ponderous stone; Ixion revolved on his wheel; Tantalus was tormented with inextinguishable hunger and thirst, and the Danaids toiled in vain to fill their sieves from the waters of the Lethe. (See, also, the article *Hieroglyphics*, division *Egyptian Mythology*.)

Tartary, Tartars. The old geographers divided the country of the Tartars into European or Little Tartary, and Asiatic or Great Tartary. The former comprised those countries round the Black sea which were inhabited by the Nogay Tartars, and the Budshiac Tartars, or Bessarabians, and a part of the country between the Dnieper and the Dniester. But since these districts have been annexed to Russia (1784), the name has gone out of use; and they constitute the governments of Taurida (q. v.), Cherson (q. v.) and Ekaterinoslav, which contain several commercial cities, and, besides Tartars, have many Russian, Greek, German and Jewish colonists among their population. Asiatic Tartary, called, from its extent, *Great Tartary*, borders on the Asiatic provinces of Russia, on Persia, Thibet and the Chinese empire. The northern part (Dschagatai, or Zagatai, or Independent Tartary) contains extensive steppes, and is partly occupied by nomadic tribes, which are governed by separate khans (princes), and differ considerably in their character and manners: some of these khans are under the protection of Russia. The southern part is called *Great Bucharia*, in which, among other commercial cities, is Samarcand, once the residence of Timour. Little Bucharia is subject to China. (See *Bucharia*.) The whole of Central Asia, to the west of Dschagatai, is often improperly styled *Chinese Tartary*. This error arises from the confusion of the Mongol and Mantchoo tribes, who roam over these regions, with the Tartars, with whom they have no affinity. (See *Mongols*, *Calmucs*, and *Mandshures*.) The proper Tartars, or, more correctly, *Tatars*, are divided into numerous branches, and, under different names, occupy a large extent of territory in Europe and Asia. Their true name is *Turks*, or *Turcomanns*, that of *Tatar* being, according to some, a Chinese term for all the nomadic tribes of Central Asia, and, according to others, the name of a Mongol tribe. Once the terror of their neighbors, and not without civilization, some traces and monuments of which still exist, they are now, for the most part, subject to foreign masters. Some tribes continue to preserve their independence, occupying regions too barren to offer any temptation to conquerors, or too remote to be easily accessible; but these circumstances, which have protected them from the arms of foreign conquerors, have also prevented them from being much visited by travellers; and little is known of them and of their country. The Tartar population in Russia amounts to about three million souls, residing chiefly in the southern provinces, in stationary habitations, and occupied with agriculture: they are peaceful and industrious in their habits.

Some Tartar colonies are distributed among the Russian villages in the governments of Orenburg, Kasan and Tobolsk, and several hordes are independent allies of Russia. The Russian Tartars consist of several branches; the Tartars proper, the Nogays, the Bashkirs, the Kirghises, Yakoutes, and Teleutes. The Tartars proper are descendants of the two great hordes which the successors of Gengis Khan established in Siberia and on the Volga. They comprise the tribes of Kasan, Astrachan and Taurida. They still preserve the peculiar national physiognomy. The true Tartar is well formed, of middle size, slender, with small, but lively and expressive eyes, and of decent and even dignified demeanor: he is frank, kind, hospitable, peaceful, courageous, fond of instruction and of the arts, agriculture and mechanical occupation. The females are not without grace and beauty. About one fifth of these Tartars have embraced the Christian religion; the rest are Mohammedans. Some of them still live in tents, and lead a wandering life. The Siberian Tartars have intermixed with other races, and lost much of their national peculiarity: some of them are stationary, and cultivate the ground; but the most of them are nomads: they are either heathens or Mohammedans. The Nogay Tartars, who dwell on the Cuban and the Volga, and in some other districts, are Mohammedans, and chiefly lead a wandering life: they are much inferior to the Tartars proper in civilization and personal appearance. The Bashkirs are in a still lower condition: they wander in summer, and dwell in villages and wooden huts in winter. (See *Bashkirs*.) The Kirghises, who inhabit the great steppe of Orenburg, breed cattle, live in tents, are Mohammedans, and resemble the true Tartars more nearly than the last mentioned tribes. (See *Kirghises*.) The Yakoutes and Teleutes are few in number, lead a wandering life, worship idols, and are altogether in a low state of civilization. The Bucharians, who are found in Russia, live in cities and villages, and are industrious workmen. (See *Turcomania*, and *Usbecks*.)

Tartini, Giuseppe, an Italian musician and composer, a native of Pirano, in the province of Istria, was born in 1692. His father gave him an expensive education, with the view of qualifying him to follow the law as his profession, and had him also instructed in all the accomplishments of a gentleman. Among them music was not forgotten; but it was not till a secret marriage alienated from him the affections of his friends, that he thought of making it conducive to his support. An ecclesiastic, connected with the family, procured him a situation in the orchestra of his convent, where an accident discovering his retreat, matters were at length accommodated, and he was enabled to settle with his wife at Venice. Here the example of the celebrated Veracini excited in him the strongest emulation; and he is said to have retired to Ancona for the sole purpose of being able to practise on the violin in greater tranquillity than circumstances allowed him to enjoy at Venice. While thus occupied, he discovered, in 1714, the phenomenon of "the third sound," i. e. the resonance of a third note when the two upper notes of a chord are sounded; and, after seven years' practice, obtained the situation of leader of the orchestra in the cathedral of St. Anthony at Padua. In this capacity he continued to act till death, with increasing reputation, and declining, from devotion to his patron saint, many advantageous offers both from Paris and London. A singular story is told respecting one of his most celebrated compositions. One night he dreamed that he had made a compact with the devil, and bound him to his service. To ascertain the musical abilities of his associate, he gave him his violin, and desired him to play him a solo, which Satan executed in so masterly a manner, that Tartini, awaking in the ecstasy which it produced, and seizing his instrument, endeavored to recall the delicious sounds. His efforts were so far effectual as to produce the piece generally admired under the name of the Devil's Sonata: still the production was, in his own estimation, so inferior to that which he had heard in his sleep, as to cause him to declare that, could he have procured a subsistence in any other line of life, he should have broken his violin in despair, and renounced music for ever. Besides his musical compositions, Tartini was the author of several treatises on the science. His death took place at Padua in 1770.

Tartsche; a round shield, formerly much in use with the Turks. Perhaps the word is of Slavonic origin, as it still has this signification in Russian and Polish.

Tartuffe; the chief character in Molière's best comedy, first played, in 1664, before Louis XIV. Tartuffe is a hypocrite; and the word is at present used to designate such, not only in French, but also in other languages. Some say that the character of Tartuffe depicts the confessor of Louis XIV, father Lachaise, whom Molière once saw eating truffles (in French, *tartuffes*) with great relish. Others say that the poet, being at the house of the nuncio, saw two monks praying, apparently very devoutly, when a Savoyard entering with truffles to sell, the two monks exclaimed with great enthusiasm, *O signore, tartuffi! tartuffi!* The latter version does not seem probable. Molière had already many enemies among the clergy, lawyers and physicians; and all the fools and bigots were against the public performance of Tartuffe. Two years Molière applied in vain for permission to the court, the papal legate, the prelates, &c. At length permission was obtained; but just as the curtain was about to rise, it was prohibited again, of which Molière pointedly informed the public himself with these words, referring to the president of the parliament: *Monsieur le president ne veut pas qu'on le joue!* At length, in 1669, Molière succeeded in bringing the play on the stage; and for three months Tartuffe was performed uninterruptedly—a sufficient proof of the justice of its satire.

Tasch; Turkish for *stone*, in many geographical names.

Tasso, Bernardo, a distinguished epic and lyric poet, whose fame has, however, been eclipsed by that of his son Torquato, was born at Bergamo, in 1493, and was of an ancient and noble family. His education was conducted with great care; and he not only cultivated the lighter literature, but devoted himself to the study of politics. He had already become known as a poet throughout Italy, when Guido Rangone, general of the pope, and a patron of learning, took him into his service, and employed him in managing the most difficult negotiations with Clement VII at Rome, and Francis I in France. Bernardo subsequently entered into the service of Renata, duchess of Ferrara, but soon left her court, and went first to Padua and then to Venice. Here he published a collection of his poems, which gave him a place among the first of living poets. Ferrante Sanseverino, prince of Salerno, engaged him in his service, in 1531, as secretary, on honorable and advantageous terms. When the prince followed Charles V to Tunis, in a galley equipped at his own cost, Tasso accompanied him, and, after his return, was sent on public business to Spain. In 1539, he married the rich and beautiful Porzia de' Rossi, and retired, with the consent of the prince, to Sorrento, where he lived till 1547. But the misfortunes of his master, whose estates had been seized by Charles V, on account of his opposition to the introduction of the inquisition into Naples, involved Tasso in the greatest embarrassments. He was compelled to seek another place of refuge, and was finally invited by the duke of Urbino to take up his residence at Pesaro. The leisure which he now enjoyed was employed in finishing his *Armida*, which he published at Venice in 1560. In 1563, the duke of Mantua engaged him in his service, and appointed him governor of Ostiglia, where he died in 1569. His remains were interred at Mantua under a handsome monument erected by the duke, with the inscription *Ossa Bernardi Tassi*; but his son Torquato afterwards removed them to Ferrara. His chief work, *Armida*, a romantic epic, displays much talent and art: in the expression of the tender passions, in his descriptions of nature, in vivid delineations of adventures and battles, all the ornaments of poetry are happily introduced. His lyrical and other poems, in five books, are among the most charming productions of the Italian muse. We have also a Discourse on Poetry, and three books of Letters, from his pen.

Tasso, Torquato. This poet, celebrated for his immortal works, as well as his unhappy fate, the son of the above-mentioned Bernardo Tasso, was born in the year 1544, at Sorrento. His talents early and rapidly developed themselves. While yet a little child, he was always grave and sedate. From his seventh to his tenth year, he attended the schools of the Jesuits in Naples, and learned the Latin and Greek languages thoroughly. He then accompanied his father to Rome, where, under his superintendence, he continued his studies with equal success for two years. He then went to Bergamo, and, six months after, to Pesaro, where his father had met with a favorable reception from the duke of Urbino. Here he shared the instruction of the duke's son. His favorite studies were philosophy and poetry; but he also devoted himself to mathematics and chivalrous exercises. When his father resided at Venice, he remained there with him for a year, and then went, at the age of thirteen years, to Padua, with the intention of studying law. But his genius drew him irresistibly to poetry, and, at the age of seventeen years, he came out with an epic poem, in twelve cantos (*Rinaldo*), which he dedicated to the cardinal Ludovico of Este. Italy received this work with universal applause; and his father consented, after a long opposition, that he should relinquish the study of the law. Torquato now devoted himself with redoubled zeal to literary and philosophical studies, and, with this view, accepted an invitation to Bologna. Here he commenced the execution of a plan of an epic poem, which he had already formed in Padua—the conquest of Jerusalem under the command of Godfrey of Bouillon. But, in the midst of these occupations, he was unexpectedly disturbed. He was falsely accused as the author of a satirical poem in circulation, and was subjected to a judicial examination. This induced him to leave Bologna. He went to Modena, and then accepted the invitation of the friend of his youth, the young Scipio Gonzaga, who had founded an academy in Padua, and wished to see Tasso at the head of it. He studied with great assiduity the philosophy of Aristotle, but still more that of Plato, towards whom he felt himself drawn by the cords of sympathy. Meanwhile, he did not lose sight of his epic poem. How intently the theory of this species of poem occupied him may be seen by the three dialogues which he then composed on the subject. The cardinal Ludovico of Este appointed him a gentleman of his court, and wished that he should be present in Ferrara at the nuptials of his brother Alphonso with an archduchess of Austria. Tasso went, in October, 1565, and attended the splendid *fêtes* with which those nuptials were celebrated. The sisters of the duke, Lucretia and Leonora, both indeed no longer young, but beautiful and lovely, gave the poet their friendship; in particular the latter, who presented him to Alphonso. This prince, who knew that Tasso wished to celebrate the conquest of Jerusalem in an epic poem, received him in a most flattering manner, and warmly encouraged his undertaking, so that the poet returned to his labor, which had been interrupted during two years, and determined to dedicate his work to the duke Alphonso, and to raise in it a monument to the fame of the ducal house, from which he then enjoyed such distinguished favor. For a short time only he left Ferrara to visit Padua, Milan, Pavia, and Mantua, where he saw his father. He returned with increased celebrity. The heart of Tasso was much affected by the unexpected death of his father; but neither this misfortune, nor other distractions, prevented him from laboring every day on his poem, of which he had finished eight cantos, when he travelled in the suite of the cardinal of Este to France, in 1571. Here he was received with distinction by Charles IX, as well as by the whole court. The poet Ronsard was his friend; and they communicated to each other their poetical labors. In the mean time, Tasso may have expressed himself too freely and unguardedly concerning some subjects which then occupied the minds of all: he lost the favor of the cardinal, and, in consequence, appears to have been involved in some embarrassments, and finally departed for Italy. He returned to Rome, and soon entered, according to his wishes, into the service of the duke Alphonso, by the mediation of the princess of Urbino, Lucretia of Este, and the princess Leonora. The conditions were favorable and honorable, and left him in possession of entire freedom. But hardly had he applied himself again to the work, which the world expected with impatience, when the death of the duchess again interrupted his labors. Alphonso soon after made a journey to Rome, and Tasso took advantage of the leisure thus afforded him to compose his *Aminta*, the plan of which had been for a long time in his mind. The representation of an idyl in dialogue, written by Agostino degl'Argenti, at which he had been present six years before, in Ferrara, had delighted him, and suggested to him the idea of a similar work, which he now completed in two months, and which far surpassed all that Italy then possessed of this kind. From this dramatic performance the opera may be considered to have taken its rise. The duke was most agreeably surprised, on his return, by this performance, and ordered the representation of it to be made with the greatest splendor. Tasso's consideration and favor with the duke increased; but his good fortune excited the envy of many, who continually meditated his ruin. The princess of Urbino wishing to become acquainted with the poem, which was the subject of general admiration, Tasso paid her a visit at Pesaro, where the old prince Guidobaldo, as well as his son and daughter-in-law, received him in a very flattering manner. For several months, he lived in the charming castle Durante, in the most intimate friendship with Lucretia, who willingly listened to the verses in which he immortalized her. With rich presents he returned to Ferrara, and occupied himself again with his epic poem, which he once more reluctantly discontinued, to accompany the duke to Venice, whither the latter went to meet king Henry III, who had just exchanged the throne of Poland for that of France, and who was now invited to visit Ferrara. This journey took place in the hottest season of the year, and brought on the poet a fever, which continued a long time, and interrupted all his labors. During his convalescence, he finished, in the early part of the year 1575, his *Goffredo*—the fruit of so much exertion, and the source of such great misfortunes to him. But he wished, before publishing it, to obtain the judgment of his friends; and their discordant opinions perplexed and agitated him to such a degree as to occasion another burning fever, from which, however, he soon recovered. He immediately examined his work anew, in order to retouch or alter it in particular places. The duke treated him with redoubled attention and distinction. Tasso accompanied him on his journeys of pleasure to Belriguardo, and Lucretia, who had separated from her husband, and had returned to her brother, wished to have the poet always with her. It was with difficulty that he obtained, under these circumstances, in November, 1575, permission to go to Rome, in order to subject his poem to a new and thorough examination. Here he was well received, in particular by his friend Scipio di Gonzaga. By him he was presented to the cardinal Ferdinand de' Medici (brother, and afterwards successor, of the grand-duke of Tuscany), who, knowing that the poet was no longer pleased with Ferrara, proposed to him the service of the grand-duke. Tasso, however, declined, from a feeling of gratitude towards the house of Este. He therefore soon returned to Ferrara, where, not long after, arrived the young and beautiful countess Leonora Sanvitali, wife of the count of Scandiano, a lady whom Tasso ardently admired, and whom he has celebrated in his poems. She, also, on her part, was not insensible to his friendship; and the duke about this time conferred upon him the vacant office of historiographer to the house of Este: thus, to his misfortune, he found himself bound more closely to Ferrara; and the hatred of his rivals and enemies was increased. He was greatly troubled by the information that his poem had been printed in a city of Italy, as it did not appear to him sufficiently finished for the press, and as he saw himself, also, by this means, deprived of the advantages which he had hoped for from the labor of so many years. This and other troubles, partly real, partly imaginary, increased his melancholy: he believed himself persecuted by his enemies, calumniated, accused. In this state of mind, one evening, in the apartment of the duchess of Urbino, he drew his sword against one of her servants. This induced the duke to arrest him, and confine him in a house near the palace; but, upon his entreaty, he restored him to liberty, and merely desired that he would put himself under the care of a physician. A cure appeared to be effected, and the duke took him on a journey of pleasure to Belriguardo, in order to console and divert him, after he had caused the grand inquisitor to satisfy some scruples of conscience which had arisen in Tasso's mind, on account of doubts upon religious subjects. But all this care was not sufficient to restore the poet's peace, and the duke at last saw himself under the necessity of letting him return, according to his desire, to the Franciscans in Ferrara. His situation became continually worse: he imagined himself surrounded by perils, gave himself the most painful reproaches, and, at last, in this state of mental disorder, took advantage of a moment when he was not watched, and, destitute of every thing, without even his manuscripts, made his escape on the 20th of July, 1577. He hastened to his sister Cornelia, who lived in a state of widowhood at Sorrento, in Naples, and who received him most tenderly. By her care, he at last began to grow composed. He repented of his precipitate flight, and presented to the duke and princesses a petition that he might be restored to his place, but particularly to their favor. He, indeed, went back to Ferrara; but his old malady soon returned, and he escaped a second time. In vain did he seek shelter in Mantua, Padua and Venice: at the court of Urbino he first met with a worthy reception. But, notwithstanding all the friendship and care with which he was treated, his melancholy acquired new strength: he thought himself not secure; and, while he fled from imaginary dangers, he rushed upon real ones. He went, at last, to Turin. Here a friend recognised him, extricated him from his embarrassments, and presented him to the marquis Filippo d'Este, who received him in a very friendly and liberal manner. The archbishop of Turin, an old friend of Bernardo Tasso, introduced him to duke Charles Emanuel, who received him under the same conditions as those on which he had lived in Ferrara. Once more the unhappy Tasso took courage, and bright sparks shone through the gloomy mist which had veiled his mind, and which but too soon resumed the ascendency. He longed to be once more in Ferrara, and thought that the nuptials of the duke with Margareta Gonzaga would be the most suitable time for his appearance there. He went, but was bitterly disappointed. He was received on every side with indifference, even with mockery and contempt: neither the duke nor the princesses admitted him to their presence; and he poured forth loud invectives against Alphonso and the whole court. The duke, instead of bestowing pity upon the unfortunate poet, commanded that he should be placed in St. Anne's hospital, and confined there as a madman (March, 1579). In order to explain this cruel command of the prince, other causes have been assigned, in particular the love of Tasso for the princess Leonora. But though his passion cannot be denied, yet it can in no way be proved that Tasso overstepped the limits of respect and modesty. It may, indeed, have contributed to aggravate the frenzy which sometimes visited him, and which may, perhaps, have been owing to physical as well as to moral causes. That Tasso, by such measures as were taken with him, could not have been cured, is evident. The very thought that he was in a madhouse must have been revolting to him; and not less painfully must he have felt the severity with which he was treated; the indifference with which all his entreaties and representations were received by the duke and the princess. And yet, amidst his despondency, this rare genius enjoyed calm and lucid moments, in which he poured forth the most glorious poetical and philosophical effusions. A new affliction to him was the information that his poem had appeared in print at Venice in a very mutilated condition. This first edition was quickly followed in different places by others, of which every successive one surpassed the preceding in correctness and completeness. Thus, in six months, six editions of the Jerusalem Delivered were printed. The printers and publishers enriched themselves, while the unhappy poet languished in close imprisonment, sick and forgotten. It was not till two years after that he was allowed by the duke, in consequence of his repeated entreaties, several apartments, instead of his prison-like abode. Here he enjoyed greater freedom, received visits from friends and strangers, and was permitted, from time to time, accompanied only by one person, to walk out, and to visit some society or place of amusement. The duke even once sent for Tasso at a time when some French and Italian noblemen were with him: he received him with kindness, and promised him a speedy release. Notwithstanding this, he saw himself, even before the end of the year, deprived of his late accommodations. Amidst these melancholy circumstances, a new storm burst over him. Among other writings to which the Jerusalem Delivered had given rise, was a dialogue by Camillo Pellegrino on epic poetry (*Il Carrafa, ovvero della Poesia epica*, 1584), in which Tasso was placed far above Ariosto. This gave occasion to violent contentions. The numerous adherents of the *Divino*, and among these the two academicians of Crusca, Lionardo Salviati and Sebastiano de' Rossi, stepped forth in opposition, in the name of the academy, and assailed the Jerusalem Delivered, and its author, in order to defend the Orlando, or at least under this pretext. With dignity and moderation, Tasso replied to the charges of his opponents, which, in his situation, embittered by mental and bodily pains, must certainly be considered as a double merit. At the same time, he was occupied about the means of obtaining his liberty. He had called upon the most powerful persons to be his intercessors. Gregory XIII, the cardinal Albano, the grand-duke of Tuscany, the duke and duchess of Urbino, the duchess of Mantua, several princes of the house of Gonzaga, had in vain employed their good offices for him. The city of Bergamo, Tasso's native place, had, for the same purpose, sent a special ambassador to the duke. The latter made promises which he never fulfilled. Tasso's condition continually became worse: he was broken down in body and mind, and suffered periodically from actual madness. At length the hard-hearted Alphonso was softened, and, at the most urgent entreaties, yielded up the person of the poet, after an imprisonment of more than seven years, to his brother-in-law Vincenzo Gonzaga, prince of Mantua, who promised to keep such a watch over him, that Alphonso should have nothing to fear from him (July, 1586). In Mantua, Tasso met with the most friendly and honorable reception; but his malady had taken too deep root to leave him entirely. He, nevertheless, resumed his literary labors: he completed, among other things, *Floridante*, which had been commenced by his father, and published it with a dedication to the duke of Mantua and Bologna. He also recomposed his tragedy *Torrismondo*. In the next year, he enjoyed the happiness of visiting Bergamo, where his appearance was celebrated by the whole city. The death of the duke of Mantua recalled him to that city. His son and successor manifested towards the poet the same kindness, but not the same friendship and confidence. Tasso began to be discontented with his residence in Mantua. He received an honorable invitation to be professor in the academy at Genoa, but was prevented by his sickness from accepting it. He then formed the resolution of going to Rome. Here he was so well received, not only by Scipio Gonzaga, but also by several cardinals, that he again entertained new hopes; but nothing was effected, and he repaired, in 1588, to Naples, for the purpose of recovering the confiscated fortune of his parents. Here he occupied himself with a recomposition of his Jerusalem Delivered, in order to purge it from the faults which he perceived in it, as well as from the praises bestowed in it upon the house of Este. From Naples he returned to Rome; and, finding there also occasion for discontent, he accepted the invitation of the grand-duke of Florence. He had reason to be satisfied in every respect with his reception, both from the grand-duke and from the people, but soon sighed again for Naples, and, with every mark of esteem, and with rich presents, departed in the autumn for Rome, where he arrived sick. Before he had recovered his health, he repaired, in consequence of urgent entreaties, to Mantua, to visit the duke Vincenzo Gonzaga; and it would have been well for him to have remained here, if his continually declining health had not made him desirous to go to Naples. At the invitation of his friends, he went thither in January, 1592, and took up his abode with his patron, the prince Conca. The completion of Jerusalem Conquered (the recomposition of Jerusalem Delivered) was his first employment, and was almost concluded, when he became suspicious that the prince wished to take possession of his manuscripts. He communicated this apprehension to his friend Manso, who, with the consent of the duke, and without any violation of gratitude or friendship, received him into his house, which was most charmingly situated on the sea-coast. This had a very favorable influence upon Tasso, who gave the last finish to his Jerusalem Conquered, and immediately commenced, at the desire of the mother of the marquis, his poem Of the seven Days of the Creation. In the mean time, Hippolitus Aldobrandini had ascended the papal chair as Clement VIII. Tasso had congratulated his former patron upon this event, as he had before done Urban VII, in an excellent canzone, and was at last obliged to comply with the repeated invitation of the pope to come to Rome. The pope, as well as both his nephews, in particular the cardinal Cintio Aldobrandini, paid him the most delicate and friendly attentions. Tasso, from gratitude, dedicated to the latter his Jerusalem Conquered; and the return of his malady alone induced him to leave Rome, and again to return to Naples. Here he passed four months very happily in the circle of his friends. Meanwhile, Cintio, in order to draw him back to Rome, had procured for him from the pope the honor of a solemn coronation in the capitol. At this news, Tasso set off for Rome, where he arrived in November, 1594, and was received with great distinction. The pope overwhelmed him with praises, and said to him, "I give to you the laurel, that it may receive as much honor from you as it has conferred upon those who have had it before you." The solemnity was, however, delayed till the spring, in order to give it the greater splendor. During the winter, Tasso's health failed more and more: he felt his end approaching, and ordered himself to be carried into the monastery of St. Onofrio, where he died, April 25, 1595, the very day which had been appointed for his coronation. A raging fever terminated his life, at the commencement of his fifty-second year. The cardinal Cintio caused him to be buried honorably in the little church of the monastery; and, eight years after, the cardinal Bevilacqua ordered the monument to be erected which is still to be seen there. The Italians Manso, Serassi and Zuccala (1819) have written his life. Serassi has also published a collection of more than 250 letters by Tasso. The physician Giacomazzi, in his *Dialoghi sopra gli Amori, la Prigionia ed il Genio di Torquato Tasso, etc.* (Brescia, 1827), has expressed the opinion that not Leonora, but Lucretia, afterwards the wife of the duke of Urbino, was the object of the Platonic love of the unfortunate poet. Frederic Schlegel, in his *Geschichte der alten und neuen Literatur* (History of Ancient and Modern Literature), comparing Ariosto, Camoens and Tasso, says of the latter, "Not only a poetical, but also a patriotic, inspiration for the cause of Christendom animated this poet, in whom love of glory and pious feeling were equally predominant. Yet he has by no means reached the grandeur of his subject; and so little has he exhausted its treasures, that he may be said only to have skimmed over its surface. He was in some degree confined by the Virgilian form, from which he has borrowed, with no great success, a few pieces of what is commonly called the *epic machinery*. Tasso belongs, upon the whole, rather to the class of poets who represent themselves and their own exquisite feelings, than of those who reflect a world in their own minds, and are able to lose and forget themselves in it. The finest passages of his poem are such as would be beautiful either by themselves or as episodes in any other epic, but have no necessary connexion with the subject. The charms of Armida, the beauty of Clorinda, and the love of Erminia—these and similar passages are the ones which delight in Tasso. In his lyrical poems (*Rime*), there is a glow of passion, and an inspiration of unfortunate love, compared with which the coldness of the artificial Petrarch appears repulsive. Tasso is altogether a poet of feeling; and as Ariosto is, throughout, a painter, so over the language and versification of Tasso, there is poured forth the whole charm of music—a circumstance which has, without doubt, greatly contributed to render him the favorite poet of the Italians. His popularity exceeds even that of Ariosto. Individual parts and episodes of his poem are frequently sung; and the Italians, having no romantic ballads, like those of the Spaniards, have split their epic poem, in order to adapt it to song, into what may be called ballads, the most melodious, graceful, noble and poetical ever possessed by any people. Perhaps this mode of treating their great poem was the best for the enjoyment of it; for, by giving up the connexion, little seems to be lost. How far Tasso's notions on epic art were from being satisfactory to himself, is evident from his many alterations and unsuccessful attempts. His first attempt was a romance of chivalry. Afterwards, in the decline of his powers, he entirely recast the whole of his Jerusalem Delivered, to which he owes his greatest fame, sacrificing to the moral severity or anxiety which he had adopted the most delightful and glowing passages in the poem, and introducing, throughout, a cold allegory, little calculated to compensate for what he had taken away. He also attempted a Christian epic on the subject of the creation. But, even to the most gifted poet, how difficult must it be to unfold a few mysterious sentences of Moses into as many cantos! In this poem, Tasso laid aside the use of rhyme, although his poems derive a great part of their charms from it, and although no poet ever possessed so entire a command of rhyme. He has often been censured for his plays of thought, or *concetti*, as they are called. Many of these, however, are not only full of meaning, but beautiful as images. A poet of feeling and of love may especially be pardoned such trifling errors. If we regard Tasso merely as a musical poet of feeling, it forms, in truth, no proper subject of reproach, that he is, in a certain sense, uniform, and, throughout, sentimental. Uniformity of this sort seems to be inseparable from that poetry which is in its nature lyrical; and it seems to me a beauty in Tasso, that he has spread this soft breath of elegy even over the representation of the charms of sense. But an epic poet must be richer in every thing; he must be multiform; he must embrace a whole world of objects, the spirit of the present time and of past ages, of his nation and of nature; he must have command not only over one chord, but over the whole complicated instrument of feeling."—An account of the different original editions of Tasso's works is to be found in *Tassos Leben und Characteristik nach Guinguené, dargestellt von F. A. Ebert*—Tasso's Life and poetical Character, by Ebert (Leipsic, 1819). The English language possesses three translations of Tasso's Jerusalem Delivered, by Fairfax, Hoole and Wiffen.

Tassoni, Alexander, one of the celebrated Italian poets, was born at Modena, in 1565. His childhood was rendered unhappy by the early loss of his parents, by sickness, enemies, and various misfortunes. All this, however, did not interrupt him in his studies at Bologna and Ferrara. In 1597, he went to Rome, and became secretary to cardinal Ascanio Colonna, who took him to Spain in 1600, and twice despatched him upon business into Italy (1602 and 1603). Upon one of these journeys he wrote his celebrated *Considerazioni sopra il Petrarca*. At Rome, he was admitted into the academy of the Umoristi. One fruit of his intercourse with the societies of Rome was the ten books of his *Pensieri diversi*, a specimen of which, under the title *Quesiti*, he published in 1608, enlarged in 1612. This work, full of ingenious paradoxes (in which the author was not probably always serious), directed against the sciences, was also seasoned with much wit and elegance, and made a powerful impression. Still more was this the case with the above-mentioned *Considerazioni*, which first appeared in 1609. Considering the veneration in which Petrarch was held by some to be extravagant, he endeavored, in an unreasonable manner, to diminish the fame of this great poet, and hence became involved in a series of controversies. Tassoni had been without office since the death of cardinal Colonna. Being destitute of the means of an independent livelihood, he entered, in 1613, the service of the duke of Savoy, Charles Emmanuel, and of the cardinal, his son. Here he was alternately in favor and disgrace. This might have been, in part, owing to his uniform hatred against the Spaniards, with whom the duke was sometimes at war, sometimes at peace. Tassoni has been accused, not without reason, of writing some philippics (*filippiche*) against the Spaniards, and likewise a treatise entitled *Le Esequie della Monarchia di Spagna*, although he positively denied the authorship of them. In 1623, he left the service of the duke, and devoted himself for three years to study and the cultivation of flowers, of which he was very fond. At that time, he probably completed a work previously commenced (*Il Compendio del Baronio*), which he began in Latin, but afterwards executed in Italian. In 1626, his condition was improved. Cardinal Ludovisio, a nephew of Gregory XV, received him into his service upon advantageous terms. After the death of the cardinal, in 1632, Tassoni entered, with the title of counsellor, into the service of his native prince, duke Francis I. He received an honorable allowance, and resided at court, but enjoyed this good fortune for three years only, when he died, in 1635. The fame of Tassoni is owing, not to the works already enumerated, but to a comic-epic poem, under the title *La Secchia rapita*, which first appeared in 1622, and was published by him, probably for particular reasons, as the production of his youth, although the careful finish of the versification bears the stamp of mature age. The subject of the poem is the war of the Modonese and Bolognese, in the middle of the thirteenth century. In this war, the bucket of a well was removed from the city by the Modonese, who had penetrated into Bologna, and conveyed as a trophy to Modena, where it is preserved as a memorial to the present day. This event, and the fruitless efforts of the Bolognese to recover the lost bucket, Tassoni relates in twelve burlesque epic cantos, characterized by the spirit and grace of Ariosto, and breathing in some places an epic grandeur. The language has the genuine Tuscan character, and the versification is easy and agreeable. If this poem has met the fate of Hudibras, the reason, in both cases, is the same; namely, that the interest of the circumstances has passed away with the time in which the poem was written, so that many allusions, which constitute the very spirit of the poem, and at the time of its publication were easily understood, can now be made intelligible only by means of copious notes.

Taste, in physiology; one of the five senses, by which are perceived certain impressions made by particles of bodies dissolved by the saliva on the tongue or the other contiguous parts of the body endowed with this sense. As has been already observed in the article *Senses*, taste does not appear to be confined to the tongue, that member being wanting in many animals which do not seem destitute of the sense, and, in many which have a tongue, this member, from its structure, is not adapted to receive impressions from objects of taste. Again, it is not the whole surface of the human tongue, according to some late experiments, which is capable of those impressions that we ascribe to taste. By covering the tongue with parchment, sometimes in whole, and sometimes in different parts, two experimenters in Paris (MM. Guyot and Admyraula) found, that the end and sides of the tongue, and a small space at the root of it, together with a small surface at the anterior and superior part of the roof of the palate, are the only portions of surface in the cavity of the mouth and throat that can distinguish taste or sapidity from mere touch. A portion of extract of aloes, placed at any other part, gives no sensation but that of touch, until the saliva carries a solution of the sapid matters to those parts of the cavity.* (See *Tongue*.) The little glands of the tongue dissolve the salts contained in articles of food, which, when dissolved, penetrate into the three nerves on each side of the tongue, that are connected with the brain and spinal marrow. Thus we receive those sensations which we call *sweet*, *sour*, *bitter*, *sharp*, *insipid*, *astringent*, and numberless others, which, though we have no names for them, yet are very distinct, as they enable us to recognise particular objects. The impressions thus received we ascribe to the objects that excite them, though acidity is, properly speaking, not more a quality of vinegar than pain is of the whip or spur. The word *taste* thus comes to be applied to the things which excite it; and we say, sugar tastes sweet with the same propriety or impropriety that we say, a flower smells sweet, a bird looks black. This confusion of cause and effect, in common language, is very natural, in fact unavoidable, considering the way in which language is formed. We possess very few words to designate the endless variety of tastes, of which we are very sensible. In this respect taste is similar to hearing. Though we all know how to distinguish a tune on the piano from the same on the guitar, it is impossible to explain distinctly why or how. Our capability of expressing tastes is, however, much greater than of expressing smells. Taste and smell are very closely connected, the loss of one being accompanied with the loss of the other. (See *Smell.*) Many words, designating impressions on the one sense, are used also for those received from the other, and *flavor* is daily applied to both. A *sweet smell* is a very common phrase; and in Thuringia the common people say the nosegay *tastes* sweet. In respect to æsthetics, taste signifies that faculty by which we judge of the beautiful and proper, and distinguish them from the ugly and unsuitable. The name results from the similarity of this faculty with the physical taste. The office of both is to discriminate between the agreeable and disagreeable; but the comparison has often been carried too far; thus, because the beautiful is also agreeable, the beautiful and agreeable have often been taken for one and the same; and because matters of physical taste are not proper subjects of dispute (since the same flavor, for instance, may be pleasant to one person and very disagreeable to others), it has been sometimes supposed that taste, in æsthetics, can have reference only to the accidental impression of a work of art on the individual. But æsthetics teaches that, though an individual may not like a picture of Raphael, and find less satisfaction in a drama of Shakspeare than in the coarse productions of a very inferior mind, there is yet beauty in them; that is to say, they answer the demands of certain rules which have an objective (q. v.) and general character, so that the beauty of a work of art may be a proper subject of discussion. Taste is the faculty of judgment operating in a certain sphere. It must be formed by practice, whereby it differs essentially from the sense of the beautiful. This is natural, whilst taste is the fruit of observation and reflection.

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* Blumenbach, in his Comp. Anatomy, Engl. by Coulson (London, 1827, ch. xviii), says: "I have seen an adult, and, in other respects, well formed man, who was born without a tongue. He could distinguish, nevertheless, very easily, the tastes of solutions of salt, sugar and aloes, rubbed on his palate, and would express the taste of each by writing."

Tate, Nahum, an English poet, was born in Dublin about the year 1652, and, after receiving a classical education at Trinity college, went to London, where he obtained the patronage of the earl of Dorset. On the death of Shadwell, the interest of his friends procured him the situation of poet laureate to William III. This post he held through that and the succeeding reign; and he even lived long enough to write the first birth-day ode on George I. He died in the mint, whither he had retired from his creditors, in 1715. He was the author of Brutus; of Alba, a tragedy; Duke and no Duke, a farce; and some other dramatic pieces: but it is by his metrical version of the Psalms of David, executed in conjunction with doctor Nicholas Brady, and commonly affixed to the liturgy of the church of England, that his name is now principally known. Several elegies and other occasional pieces also proceeded from his pen.

Tatianists. (See *Gnostics.*)

Tatius, Achilles, a Christian bishop of the third century, was born at Alexandria in Egypt. Prior to his becoming a proselyte from paganism, he was the author of one of the earliest Greek romances now extant, entitled the Amours of Clitophon and Leucippe, of which there is a translation by Cruceius. Part of a commentary on the *De Sphæra* of Aratus, ascribed to him, has come down to posterity, and has been translated by Petavius.—*Tatius* is also the name of an ancient king of the Sabines, who made peace with the Romans, and shared his kingdom with Romulus, but was assassinated six years afterwards, at the instigation of his colleague.

Tattooing; a name borrowed from the South sea islands, where it denotes the practice of staining the skin by puncturing it with a sharp instrument covered with coloring matter, or inserting the color in incisions made in the skin, and thus forming a variety of figures. We find similar practices among other barbarous tribes, and, to a certain extent, among soldiers, sailors, &c. Degrees of rank among savages are often designated by the greater or less surface of tattooed skin: sometimes the whole body, the face not excepted, are found tattooed. This is the case among the people of New Zealand.

Tauchnitz, Charles Christopher Traugott, a printer and bookseller in Leipsic, born in 1761, has had an important influence upon German typography. In 1808, he began the publication of the classical authors, and, in 1816, he set up his stereotype foundery on the Stanhope plan, which had previously been unknown in Germany. Tauchnitz was the first to apply the process of stereotyping to music. Besides publishing cheap editions of the classics, he has also printed some splendid editions both of Greek and Latin authors.

Tauenzien von Wittenberg, Frederic Bogislav Emanuel, count of, Prussian general of infantry, a distinguished soldier, was born in 1760. His father was the celebrated defender of Breslau. Tauenzien took part in the unfortunate campaign of 1806. In 1813, he coöperated in the victories at Gross-Beeren (q. v.) and Dennewitz. (q. v.) December 26, he took the fortress of Torgau; January 13, 1814, Wittenberg (on account of which he was called *Tauenzien von Wittenberg*); and, May 24, 1814, Magdeburg. He died, in 1824, in Berlin.

Taught; the state of being extended or stretched out, usually applied in opposition to *slack*.

Tauler, John, a celebrated German divine, born in 1294, or later, at Strasburg or Cologne, entered, when very young, the order of the Dominicans. His life was pure. His sermons, written in Latin and delivered in German, produced a great effect. He did much to improve the German didactic style. The earliest editions of his sermons are of 1498 and 1580. His early sermons are more metaphysical; the later ones simple and popular. Versions of them have often been published in modern German. He died in 1361. Arndt wrote his life in 1689.

Taunt; a marine epithet, signifying *high* or *tall*. It is particularly applied to the masts, when they are of an extraordinary length, as *square* is applied to long yards.

Taunton, the shire-town of Bristol county, Massachusetts, is situated at the junction of Canoe, Rumford and Taunton rivers, thirty-two miles south of Boston, and twenty-one east of Providence; population in 1830, 6045. It is a handsome and flourishing town, and contains the county buildings, an academy, a bank, and seven meeting houses. It has excellent water power, and there are several factories for cotton, paper, nails, and various kinds of iron work. The Indian name of Taunton was *Cohannet*.

Taunton; a town of England, in Somersetshire, 140 miles west of London; lon. 3° 16′ W.; lat. 50° 59′ N.; population in 1821, 8339. It consists of four principal streets, which are wide and well built, and contains two parish churches. The woollen manufacture has flourished in this town almost ever since its first introduction into England by the emigrants from Flanders, the first manufacture being established here about the year 1336. Of late years it has decayed. A silk manufacture was introduced here in 1780, and now employs a great part of the inhabitants. Taunton is an ancient borough by prescription, and has returned members to parliament from the year 1294.

Tauria. (See *Taurida.*)

Taurida; a government of Russia, comprising the Crimean peninsula (Chersonesus Taurica), the island of Taman, and the districts and steppes inhabited by the Nogay and Budshiak Tartars. The province of the Cossacks of the Black sea is also connected with it in matters of government; population, 346,000. These countries were anciently inhabited by Scythians and Greek colonists, and, since the time of Herodotus (B. C. 450), have been conquered and devastated by more than seventy different nations. Towards the end of the fifteenth century, they were conquered by the Turks, who drove out the Venetians and the Genoese colonies there. The Crimea had its own khan, who was, however, dependent on the sultan, and was obliged to be confirmed by him in his dignity. In 1774, the Turks were forced by Russia to acknowledge its independence, and, in 1783, it was annexed to Russia. The imperial title was graced with the addition of czar of the Taurian Chersonese, and Potemkin, who had been active in effecting the subjugation of the Tartars, received the title of *the Taurian*. The principal towns in Taurida are Simpheropol, or Akmetchat, the capital, Kinburn, at the mouth of the Dnieper, Perekop, or Orcapi, a fortress on the isthmus which connects the Crimea with the continent; Feodosia (see *Caffa*), Sebastopol and Eupatoria are important for the commerce of the Black sea. Most of the inhabitants are Tartars, who profess the Mohammedan religion, and are engaged in trade, manufactures, agriculture, and the raising of cattle. There are also many Russian, Greek, Armenian, German, &c. colonists, who are encouraged by the government to settle here. The part of Taurida between the isthmus and the Dnieper consists of great plains, some of which are infertile and uncultivated. The northern part of the Crimea is destitute of water and wood, and has a poor and saline soil. The southern part is mountainous, but one of the most fertile and delightful countries in the world. All sorts of fruits and grain, wine, silk, wax and tobacco are among the productions. —See Clarke's *Travels in Russia, Tartary and Turkey*, and Castelnau's *Essai sur l'Histoire ancienne et moderne de la Nouvelle Russie* (Paris, 1820).

Tauris; capital of the province of Aderbidjan, in Western Persia, situated in an extensive plain without trees, on the small river Spintsha; lat. 38° 20′ N.; lon. 46° 31′ E. It contains 300 caravansaries, 250 dshamis and mosques, and 150,000 inhabitants. It is celebrated throughout Asia as a commercial place, and also has important manufactures. The shagreen is made here, with which almost all Persia is supplied, every one except the peasants wearing boots and shoes of it. Tauris contains some magnificent ruins. It has suffered repeatedly from earthquakes, and from hostile violence. It was the residence of Abbas Mirza, crown-prince of Persia, until 1828, when it was occupied by the Russians. (See *Persia.*)

Taurus, in astronomy. (See *Constellation*, and *Ecliptic.*)

Taurus; a celebrated chain of mountains in the eastern part of Asiatic Turkey, whose greatest height is in the vicinity of the sources of the Euphrates, whence it extends in several ridges over the greatest part of Western Asia. One ridge, the Ala Dag, runs through Natolia, and terminates in the Chelidonian promontory over against Rhodes. Another branch extends into Syria, and there forms the Libanus and Anti-Libanus. To the north, the Taurus, which is connected with the system of mountains in Central Asia by its branches, approaches the Caucasus, and to the east unites with the snowy Kiare and mount Zagros.

Tautology (from the Greek ταυτο, the same, and λογος, speech); the repetition of the same sense in different words or phrases. (See *Pleonasm.*)

Tavernier, Jean Baptiste, baron d'Aubonne (a title derived from an estate near Geneva, which his success in mercantile pursuits enabled him to purchase), was the son of a Dutch merchant settled at Paris, who traded largely in charts and maps, the perusal of which first inspired his son with a propensity for travelling. He was born at Paris about 1605, and, before his twenty-first year, had already visited a considerable portion of Europe. He subsequently travelled through Turkey, Persia, and other Eastern countries, six times by different routes, trading as a diamond merchant, at the same time that he indulged his thirst for making himself acquainted with the manners and customs of remote nations. Of these his journeys he gave an account, with the assistance of a literary friend, whose services the defects of his own education made necessary to arrange the mass of his observations. In 1668, having realized a large fortune, and obtained a patent of nobility from the French king, he retired to his estate in the Genevese territories, with the view of passing the remainder of his life in tranquillity. The misconduct of a nephew, by injuring his pecuniary resources, altered his determination, and induced him once more to set out for Russia for the purpose of recruiting his shattered finances. He succeeded in reaching Moscow, the ancient capital of that vast empire, but died there soon after his arrival, in the summer of 1689. His Travels, of which there is an English translation, have gone through several editions in the original French.

Taxes, Taxation, denotes that portion of their property which the government of a state exacts, for the supply of the public necessities, from its subjects, or other persons residing in the country, and partaking of its advantages. Hence they form a part of the state revenues. Another part is formed by the revenues from the domains, and from the royal prerogatives, so far as the last afford only official gains, and are not used at the same time as means to exact or to raise taxes. (See *Domains*, and *Royalties.*) In most states, particularly in those of ancient times, the public expenditures were supplied from the revenues of domains and royalties, which were considered, the former as the property, the latter as privileges, of the sovereigns. As the expenses of the state continually increased, or the rulers, from bad economy, found the above-mentioned sources of revenue insufficient, they began to demand contributions from the members of the community, and imposed upon them taxes or imposts. They usually, however, met with great difficulties, since the nobles would not suffer themselves to be taxed, under pretext of forming a state within themselves, and maintained, that such contributions could be raised only with their consent. What could be obtained from them voluntarily, was very little. They, however, acknowledged the necessity of increasing the revenue of the state; but the sovereigns were afraid to constrain them to contribute, and inclined to grant them exemption from taxes, if they would only consent that the rest of the nation, which did not belong to their privileged order, should be subjected to imposts. The nobles, fearing that if no other source of revenue were left open to the sovereign, the burden of taxes would finally fall on themselves, willingly allowed him the right of taxing the rest of the nation, which, from want of union and power, was obliged to yield. Thus the taxes, for a long time, were laid almost every where on the commons only, the higher and more powerful orders, the clergy and nobility, being exempt. Enlightened governments, however, early perceived that, in order to render taxes a permanent source of revenue, means must be left to the subjects, of gaining, every year, so much as to be able to subsist, and to have a sufficient sum remaining to pay the taxes. Hence they were induced to refrain from exhausting their property. But a long time elapsed before the principles of equitable taxation were well understood. It was not till a late period, since government has become an object of profound reflection, and a more perfect system of political economy has arisen, that a theory of taxation has been formed, which can be used as a solid basis of revenue. According to this theory, taxes are the portions of the property of individuals, which each has to contribute to the public treasury, to defray the public expenses. From this definition it follows, 1. that no one should be exempted from taxes, who possesses property or income, and is protected in his person and estate, and that, in consequence, absolute freedom from taxes in any individual, so situated, is unjust towards those members of the community who are charged with them; 2. that the taxes ought to be assessed according to the net income of each individual; 3. that the taxes must never be suffered to injure the sources of income; 4. that the ratio of taxes to income ought to be as small as possible, in order that the revenue of the nation, as well as of the individual, may be allowed to increase. The greatest difficulty in effecting a just distribution of taxes, is to find the clear income of every individual. In the mode of taxation formerly practised, this difficulty was but little considered. Financiers were satisfied with laying taxes where they observed property or income, without caring much whether they were taken from the gross or net income, from the capital, or from the interest and profits. The rudest mode was to assess the taxes according to the number of heads. On the supposition that every one receives enough to pay something, they demanded from every head such a sum as, it was presumed, even the poorest could afford: the rich and the poor paid the same amount; and, therefore, the greatest inequality prevailed. Real property was early taken as a standard in distributing the taxes, as cultivated land, in civilized countries, appeared to be the safest and most substantial property. As this afforded to its proprietors or cultivators a certain income, the annual produce of the lands of those who were declared subject to taxation was estimated, and, after this ratio, the tax was distributed on real property. Thus arose the land tax, in which, however, the gross and net produce of the lands were seldom accurately distinguished; and where it was done, little dependence was to be put upon the estimate itself, and still less on the maintenance of this principle through the changes of income. As the land tax was insufficient to furnish the necessary revenue, other means were sought for, and the closest attention was paid, particularly as the circulation of money increased in civil society, to all those quarters where money appeared. Wherever money changed hands, as in sales, exchanges, inheritances, taxes were laid. Whoever desired to obtain any favor from the public officers, was obliged to purchase it with money. When property was acquired, something must be relinquished. Hence the long series of taxes on acquisition and industry. As the income of the members of the community did not yield so much as the state required, the attention of governments was directed to expenditures; and people were made to pay, wherever their expenses could be estimated. Thus taxes on consumption of every description were established. When taxes began to be treated scientifically, which was not till a long time after the different kinds had been invented and introduced, attempts were made to bring the whole mass of the existing taxes under a general system.—All taxes may be arranged under the following classes: taxes on the *possession*, on the *acquisition*, or on the *enjoyment of property*. In order to judge whether they are rightly distributed, it must first be considered, whether they can be paid regularly and continually from the net income or not. There may be a possession which brings no gain at all, as a library, a collection of pictures, &c. If an annual tax is laid upon such property, it would, sooner or later, consume the property, if it were to be paid from it, and, consequently, would contradict the principles above laid down, that property should be taxed only so far as it affords a regular income. In like way, acquisitions can be taxed, according to the principles of political economy, only when they are a permanent source of gain. If, therefore, any one acquires an estate or a capital by purchase, exchange, &c., and taxes are laid upon such an acquisition, the tax is taken from the capital, that is, from the means destined to produce profit. As far as this happens, or is in danger of happening, the system of taxation is defective. If, in fine, a tax is laid on enjoyment, or the value of things enjoyed, this can be justified only so far as he who purchases or enjoys such things can afford the expense, from an income which furnishes more than enough for his subsistence, and the source of which is not necessarily diminished by the tax. If we seek, therefore, for the principle of the distribution of taxes, which ought to serve, at the same time, as a rule for judging of the propriety of the distribution, this can be no other than the *net income* of the persons, or the *net produce* of the property. Net income or net profit is that part of income or profit which remains after the portion necessary for the maintenance of the person, or the continuance of the property which produced the income or the profit, has been subtracted. An income and profit are produced either, 1. from land; 2. from capital; 3. from labor. All taxes will be just and useful only so far as they are a part of the net produce from these sources, and are imposed and distributed after this principle. But as it is difficult, and, in many cases, impossible, in practice, to ascertain the net revenue of every one, the politician must take different ways to find the just proportion. The first way is direct—to determine, from the statement of the parties concerned, or from official estimation, the net income of the persons, or the net produce of the land, and to assess the taxes according to the result. This kind of taxes is called *direct*. But as this mode leaves a large portion of net incomes doubtful, their amount is sought for in an indirect way. It is supposed, that he who receives more than the amount at which he has rated his income, will consume and enjoy more than this sum will warrant, and, in particular, that he will enjoy certain articles, which the man of smaller income consumes not at all, or not in equal quantity. If, now, the expense for articles of consumption is taxed, an additional sum can be generally drawn from all those who pay already a direct tax on income, not sufficient, however, to cover the expenses of the state. This sum they can pay from their net income, if their affairs are properly arranged. In this way, something more is obtained from the net income of those who have concealed a part, than they would have contributed if they had been taxed merely according to their own statement. These taxes are termed *indirect*, as they are calculated, like the others, on the net income, but only in an indirect way. The art of reaching this net income by taxes on consumption, or other indirect taxes, still remains very imperfect. Its perfection is, however, necessary, if the system of taxation is to be established according to just principles. Another signification is usually attached to the division of taxes into direct and indirect. The mode in which they are raised is made the principle of denomination. By direct taxes are understood such as are laid immediately on the consumers; by indirect taxes, such as are assessed on others in advance, who are left to remunerate themselves from the rest of the community. But this principle does not afford a logically correct division; for the same tax can be raised at one time directly, at another indirectly. Thus all taxes of consumption may be raised as well from those who consume the articles, as from the tradesmen who deal in them. In like manner, many articles of luxury are taxed directly. Nevertheless, the taxes remain indirect, because the net income only is taxed according to the extravagance of individuals. Taxes imposed on goods at the time of their importation, are denominated *customs*, *duties*, or *imposts*. Adam Smith mentions one objection to this mode of raising revenue, as the importing merchant must enhance the price of his goods, not only by the amount of the duty advanced by him, but also for interest, profit, and guarantee of that amount, so that the consumer must, in fact, pay more than the tax. This objection is avoided by an excise tax, which is levied on the goods in the hands of the person who uses them, or at the time of their coming into his hands. An annual excise is sometimes levied upon articles of a durable nature, such as carriages, watches, &c.; and the principle on which this is apportioned, is to graduate it according to the supposed expenditure of the persons paying the tax, assuming that this will, as a general rule, be in some near proportion to their income. In respect to imported articles, the excise is either a substitute for customs, or an addition to them. Considered as a substitute, the excise avoids the objection pointed out by Adam Smith; but then it is an expensive tax to collect, and it necessarily gives rise to an irksome inquiry into the private concerns and habits of people, so that, as far as imported goods are the subject of taxation, the customs are the most convenient, and, on the whole, the most productive tax; and this mode of taxing is almost universally adopted. It cannot be made a question, among a free people, to whom the right of taxation belongs. In England, the principle has long been acknowledged, that taxes are a voluntary donation from the people to the government. (See Chatham's speeches on the complaints of the American colonies.) On the European continent, where, in the course of time, nearly all national representation has been lost, the physical power of the government is the sufficient argument, as in so many other instances, by which all discussion on the right of taxation is made useless. The theory of taxes has been but very lately illustrated and perfected. Adam Smith laid the first foundation of a complete theory. Before him prevailed the physiocratical system (see the article), which, however, has no solid foundations.—See the works of Adam Smith, and Say, *On Political Economy;* also sir Wm. Meredith's *Historical Remarks on the Taxation of Free States* (London, 1788, 4to.); Andrew Hamilton's *Inquiry into the Principles of Taxation* (Edinburgh, second edition, 1793, 4to.); Casaux's *Considerations of the Effect of Impost in the various Modes of Taxation* (Paris, 1794, 8vo.); Frend's *Principles of Taxation* (1799, 8vo.); Monthion's *Influence of the Different Species of Taxation on the Morality, the Activity and the Industry of Nations* (Paris, 1808, 8vo.); Mirabeau's *Théorie de l'Impôt;* Ricardo's *Principles of Political Economy and Taxation* (1819, 8vo.).

Exemption from Taxes. [Though the following observations are more particularly applicable to the continent of Europe, it was thought that the views which they present of a state of things different from what we have been accustomed to, might render them acceptable to our readers.] The privilege of exemption from taxes is granted to some orders of society, to individuals, or to particular kinds of property. The reasons for which it is usually allowed are, 1. the identity of the person exempted with the state; 2. to reward services rendered to the state; 3. as a means of paying debts due from the state; 4. the incompatibility of the public burdens with the office or character of the individual exempted; 5. because an equivalent is received in some other way; 6. poverty; 7. ancient privileges. As to the first reason, it is applicable only to the person of the sovereign; for it would be absurd to load the sovereign with taxes, whilst the taxes are only established in order to afford the sovereign the means of promoting the public welfare. It follows, then, that the revenues of the state must be free from taxes, or that the state itself, considered as a person, must be free from every tax. But whether the individual, likewise, who is invested with the sovereignty, should be entirely exempt from taxes, is a very different question; for in the revenue of such an individual, there are always two things to be distinguished, namely, *a.* that which is employed by him in the exercise of his public functions, and, *b.* that which serves to defray his private expenses; for it cannot be contended that all which the sovereign expends is devoted to the accomplishment of public objects. In addition to his public capacity, he stands in the condition of a private person, who has his individual wishes and wants to gratify. Now, if the revenue of the ruler is so large as not only to supply that expenditure which is required for maintaining the dignity of the reigning family, but also to suffice for the private gratification of the ruler, the latter part is undoubtedly to be considered like the net income of a private person. In this point of view, there is no sufficient reason why the income of the prince should be free from taxes. It appears rather, for several reasons, advisable to subject it to taxation, like other private property; 1. because, in this way, the prince feels, proportionally, the burden of the tax, in his private capacity, being obliged, like every other man, to restrict his personal expenditure; 2. because the participation of the prince in the public burdens, affords an encouraging example to his subjects, and serves to check the claim of exemption in any other class of society. In those states where the sovereignty is vested in a numerous body, the distinction between that which belongs to the members of the sovereign body, in their public and in their private capacity, is yet more evident. The members of a council who share in the sovereignty, or of the sovereign senate itself, can be as little entitled to exemption from taxes as the members of a sovereign assembly of the nation in a democracy; and the right of a prince to freedom from taxes on that portion of his income which is devoted to his private gratification, is no better founded. If the state would reward an individual for public services by exempting him from taxes, this can reasonably be done only by a personal exemption for his lifetime. To declare his estates free from taxes, is to make him a donation of a sum equal to the tax from which his estates are exempted. But to make this exemption perpetual, would be to make a grant of an indefinite value, and must be regarded as an instance of blind extravagance. In general, this species of reward is one of the most objectionable; for the reward of public services should be drawn from the public revenue, to which all classes contribute in equal proportion. But the remission of a certain kind of taxes usually imposes new burdens on some particular class of subjects. Another objection to this kind of reward is, that it makes exemption from taxes appear an honor, when it is for the interest of the state that a citizen should consider himself the more important the more he contributes to the support of the public burdens. Nearly the same reasons, in particular the last, may be urged against the use of this exemption as a means of paying the salaries of public officers. The privilege too often operates unequally in the case of different officers, one deriving from it a much greater advantage than another. Taxes paid in money are incompatible with no rank in society and no kind of occupation. Other public burdens, personal service, maintenance of soldiers, &c., may, indeed, be inconsistent with one or the other. On that account, it would be better that such burdens should be borne by individuals who are paid at a fixed rate for undertaking them. That the poor pay no taxes, is the natural consequence of a good system of taxation, which charges only the net income. It follows, from what has been said, that a personal right to exemption from taxes cannot be properly granted, and should be abolished where it exists; sufficient indemnification being provided for those who suffer by the measure. These exemptions had their origin in a time of limited views. As to the exemption from taxes of particular kinds of property, the most remarkable is that which is granted to certain landed estates. This privilege is usually justified by the following reasons: 1. that one estate has undertaken to pay the tax of another. In this way the nobility have often endeavored to defend the exemption of their estates, by pretending that their ancestors had ceded part of their lands to the peasants, on condition that the latter, in addition to some labor on the lord's estate, should pay the taxes of the same, from the produce of their farms. Such a contract might have been legally made, and might stand good, if it had been concluded for a fixed proportion of taxes, and the agreement could be clearly proved; but no compact can be acknowledged as binding, by which one side undertakes to relieve the other from the burden of all future taxes, since no one can know what their amount may become, and whether the land granted would be a proper equivalent; for, in every contract, the nature of the obligation should be definite. But in addition to the fact, that such contracts are mere fictions, the state should allow them no validity, because they give to taxes the appearance of an ignominious burden—an idea which no government should favor. 2. Governments have sometimes allowed individuals, and even whole nations, to redeem themselves from a certain tax, for a gross sum; as, for instance, in England, in the case of the land tax. Such contracts must be kept; but no individual, still less a whole class, or nation, can purchase an entire exemption from taxes, because the amount of future taxes cannot be estimated, and, consequently, their value cannot be settled. This would be to sell the very means of the state's existence. To sell an improper tax, in order to establish a better, as was done with the land tax in England, may be advisable, and certain objects may thus, for a time, be exempted from taxes; but this is no reason for releasing the income which they afford, for all future times, from taxes. 3. Finally the privilege of exemption never can be considered as absolutely irrevocable, but is subject to be judged on the general principle of utility, like all other positive laws and institutions; and if found inapplicable, injurious, and oppressive to other classes of citizens, such laws must be amended or abolished. And as the state ought never to persist in old errors at the expense of its citizens, so, on the other hand, those who are to lose the privilege of exemption from taxes should be indemnified for it according to equitable principles.

Tay, a river of Scotland, which rises in the west part of Perthshire, passes through Loch Tay, and runs into the German sea, forming a large bay at its mouth, called the *Frith of Tay*. It is navigable for vessels of five hundred tons to Newburgh, in Fife, and for vessels of considerable size as far as Perth. The salmon fishery on the Tay is extensive.

Taylor, John, usually called the *water poet*, from his being a waterman, was born in Gloucester, about 1580. He was taken young to London, and apprenticed to a waterman. He was at the taking of Cadiz, under the earl of Essex, in 1596, and afterwards visited Germany and Scotland. At home he was many years collector for the lieutenant of the Tower of London, of his fees of the wines from all the ships which brought them up the Thames. When the civil wars broke out, he retired to Oxford, where he kept a common victualling house, and wrote pasquinades upon the Roundheads. He afterwards kept a public house at Westminster. He died in 1654, aged seventy-four. His works are published under the title of "All the Works of John Taylor, the Water Poet, being Sixty and Three in Nmuber, collected into One Volume by the Author, with sundry new Additions, corrected, revised, and newly imprinted" (1630, folio). These pieces are not destitute of natural humor, and of the jingling wit which prevailed so much during the reign of James I.

Taylor, Jeremy, an eminent divine and prelate of the Irish church, was born in the year 1613, at Cambridge, where his father was a barber. He was educated at Perse's free school in his native place, and entered, in 1626, a sizar in Caius college, where he continued until he had graduated master of arts. Entering into orders, he occasionally lectured for a friend at St. Paul's cathedral, where he attracted the attention of archbishop Laud, who procured him a fellowship of All Souls college, Oxford, and, in 1640, obtained for him the rectory of Uppingham. In 1642, he was created doctor of divinity at Oxford, at which time he was chaplain in ordinary to Charles I, whom he attended in some of his campaigns, and aided by several writings in defence of the church of England. After the parliament proved victorious, his living being sequestrated, he retired into Wales, where he was kindly received by the earl of Carbery, under whose protection he was allowed to exercise his ministry, and keep a school. In this obscure situation he wrote those copious and fervent discourses, whose fertility of composition, eloquence of expression, and comprehensiveness of thought, have rendered him one of the first writers in the English language. The death of three sons within a short period, rendered a change of place necessary for the restoration of his tranquillity, and he removed to London, and officiated, not without danger, to private congregations of royalists. At length he accepted an invitation from lord Conway to reside at his seat in Ireland, where he remained until the restoration, when he was elevated to the Irish see of Down and Connor, with the administration of that of Dromore. He was also made a privy counsellor for Ireland, and chosen vice-chancellor of the university of Dublin. He conducted himself, on his advancement, with all the attention to his duties, public and private, which had ever distinguished him in humble situations. Piety, humility and charity were his leading characteristics; and, on his death, at Lisburne, Aug. 13, 1667, he left but very moderate fortunes to his three daughters. Taylor possessed the advantages of a comely person and a melodious voice, which were further set off by the most urbane manners and agreeable conversation. His works have been printed in four, and also in six volumes folio, a great part of which consists in sermons and devotional pieces. There are likewise several treatises, one of the most remarkable of which is entitled, A Discourse of the Liberty of Prophesying (Preaching), (4to., 1647), which pleads eloquently and strenuously for liberty of conscience. Of the other writings of this prelate, the most generally known are his Golden Grove, or Manual of daily Prayers; his treatises on Holy Living and Dying; and his *Ductor Dubitantium*, or Rule of Conscience. Of these the two former are peculiarly admired for fervor of devotional feeling, beauty of imagery, and illustrative and copious impressiveness of eloquence. A new edition of his works, with a life, by the late bishop Heber, was published in 1822 (15 volumes).

Taylor, John, LL. D., a distinguished scholar and critic, the son of a barber of Shrewsbury, received the rudiments of education at the grammar-school of his native town, and was entered of St. John's college, Cambridge, of which he became a fellow in 1730. In 1732, he was appointed librarian of the university, which office he soon after quitted for that of registrar. He published an edition of Lysias in 1739, and in 1742 became a member of doctors' commons. Two years afterwards he was made chancellor of Lincoln; and in 1751, entering into orders, was presented to the living of Lawford, in Essex. He published, in 1755, Elements of Civil Law (4to., reprinted in 1769). He died in 1766, after having just completed an edition of Demosthenes, in two vols., 8vo. Besides the works already mentioned, he was author of an Explanation of the *Marmor Sandvicense*, and an edition of Two Orations of Demosthenes and Lycurgus.

Taylor, Thomas, well known by the title of the *Platonist*, was born in London, of obscure parents, in 1758, and, at the age of nine years, was placed at St. Paul's school, it being intended to educate him as a dissenting minister. Disgusted, however, with the manner in which the dead languages are taught, he prevailed on his father to relinquish this plan. He was then only twelve years old; yet he became deeply enamored of a Miss Morton, who afterwards gave him her hand. While at home, Ward's Young Mathematician's Guide inspired him with a love of mathematics, and, though his father was adverse to the study, the youth soon contrived to become a proficient in his favorite science. This he accomplished by sacrificing to it a part of the hours of rest; and that he might procure a light without being discovered, he concealed a tinder-box under his pillow. When he was fifteen, he was placed under an uncle, at Sheerness, who was an officer of the dock-yard—a situation irksome in its nature, and rendered more so by the tyranny of his uncle. After enduring it for three years, he became pupil to a dissenting preacher, with the view of entering into the church. At this period he also renewed his acquaintance with Miss Morton, to whom he was secretly married. Their secret was, however, betrayed, and they were thrown upon the world, with scarcely sufficient resources to prevent them from starving. At length Mr. Taylor obtained employment as usher to a school at Paddington, which, as it kept him absent from his wife, he exchanged for that of a clerk in a banking-house, in the city. Still his pecuniary means were so limited, that in the course of the day he could not obtain a proper quantity of food, and he often fell senseless on the floor when he reached his home. At length, his circumstances were somewhat amended. His studies were still continued with unabated ardor, and, as the banking-house absorbed the whole of his days, he was obliged to devote to them several hours of the night. Having made himself master of the works of Aristotle, he passed on to those of Plato, and the commentators on Plato's philosophical writings. After he had been nearly six years in the banking-house, the failure of his health, and the nature of his occupation, determined him to procure some more eligible mode of living. An attempt to construct a perpetual lamp made him advantageously known to several eminent persons, who enabled him to emancipate himself from the drudgery of the banking-house. The munificence of a private individual, Mr. William Meredith, now put it in his power to publish a translation of the works of Plato, and the Platonic commentators. Mr. Taylor also labored for the booksellers; but the remuneration which he received from them was inadequate to his toil. For his translation of Pausanias he was paid only sixty pounds! If we contemplate the numerous obstacles which have opposed his progress, it is impossible not to admire the steady perseverance with which he has pursued his course; and it is little to the credit of England, that a man of such powers of mind, and such extensive learning, should so long have been left to struggle through the world with no other patronage than that of a few private individuals. Among his translations from the Greek are Plotinus on the Beautiful (12mo.); Proclus on Euclid, and Elements of Theology; Five Books of Plotinus; Pausanias's Description of Greece, with Notes (3 vols., 8vo., 1794); Aristotle's Metaphysics, with Notes; the Dissertations of Maximus Tyrius (2 vols., 12mo.); the Works of Plato (5 vols., 4to., 1804); the Works of Aristotle, with Elucidations from the best Greek Commentators (9 vols., 4to.); the Six Books of Proclus on the Theology of Plato, to which a Seventh Book is added by the translator; Jamblichus's Life of Pythagoras, or Pythagoric Life, accompanied by Fragments of the Ethical Writings of certain Pythagoreans, and a new Collection of Pythagoric Sentences; the Commentaries of Proclus on the Timæus; Jamblichus on the Mysteries, &c. (8vo.). Among his original works are a Dissertation on the Eleusinian and Bacchic Mysteries; a Complete Collection of all the existing Chaldæan Oracles; the Elements of the true Arithmetic of Infinites; Miscellanies in Prose and Verse, with a great number of treatises accompanying his translations, and of articles in the Classical Journal.

Taylor, Jane; an amiable and accomplished female writer, born Sept. 23, 1783, in London. Her father was a highly respectable artist. While quite young, she gave evident indications of poetic talent. Mr. Taylor became, in 1792, pastor of a dissenting congregation at Colchester, whither he carried his daughters, and taught them his own art of engraving. In the intervals between these pursuits, Miss Taylor committed the effusions of her genius to writing, and contributed to the Minor's Pocket Book, a small publication, in which her first work, the Beggar Boy, appeared in 1804. From this period until 1813, she continued to publish occasionally miscellaneous pieces in verse, of which the principal are Original Poems for Infant Minds (in two volumes); Rhymes for the Nursery (in one); and some verses in the Associate Minstrels. A prose composition of higher pretension, which appeared in 1815, under the name of Display, met with much success. Her last and principal work consists of Essays in Rhyme on Morals and Manners, didactic poems, written with much elegance and feeling. This amiable and intellectual female died of a pulmonary complaint, in April, 1823.

Tchad; a lake in the interior of Africa, in the western part of Nigritia (q. v.), discovered by major Denham, in 1822. (See *Clapperton.*) It lies between the kingdoms of Bornou and Kanem, in lat. 12° N., lon. 17° E. As it has not been entirely explored, its north-eastern limits are unknown, and its extent is uncertain. It receives two large rivers, the Yeou and the Shary, from the south-west.

Tchai (in Turkish and Persian, *river*); found in many geographical names. In Chinese geographical names, *Tchaï* signifies fortified place. *Tai*, *Pao*, *Ooei*, and other words, signify the same.

Tchang (Chinese for *middle*); in many geographical names, as *Tchang-Kone* (Central Kingdom), the name which the Chinese give to their empire.

Tcherny; a Sclavonic word, signifying *black*, and sometimes *tributary*. Tcherny appears in many geographical names, as *Tchernikov*, *Tchernovitz*.

Tching; Chinese for *town* and *wall*, as *Sin-Tching* (New Town).

Tchudsko Lake. (See *Peipus.*)

Tea (*thea*). The tea plant so strongly resembles the *camellia* in its botanical characters, that it has lately been referred to that genus. The flowers and leaves are, however, much smaller. The shrub attains the height of five or six feet, and is branching and evergreen. The leaves are alternate, oval-oblong, serrated, about an inch and a half in length, of a dark, glossy-green color, and firm texture. The flowers are solitary or in pairs, disposed in the axils of the leaves; the corolla white, and composed of six petals. It is a native of China and Japan, and has been cultivated, and in common use in those countries, from the most remote antiquity. Tea was hardly known in Europe before the middle of the seventeenth century, but now has become an article of such commercial importance in that portion of the globe, as to employ more that fifty thousand tons of shipping in the transportation of it from Canton. Still so vast is the home consumption, that it is alleged, that were Europeans to abandon the commerce altogether, the price would not be much diminished in China. It appears to be cultivated in all parts of China, even in the vicinity of Pekin, which is in the same latitude as Philadelphia, and has a very similar climate. It succeeds best in south exposures and in the neighborhood of running water. As the seeds are very apt to spoil, and scarcely one in five will germinate, it is usual to plant several in the same hole, at the depth of four or five inches. The plants require little further care than that of removing the weeds, till the third year, when the leaves may be gathered. In seven years, the plants have attained the height of six feet; but, as they bear few leaves, they are trimmed down, which produces a great number of new leaves. The leaves are plucked off, one by one, with many precautions; and only from four to fifteen pounds are collected in a day. In a district in Japan, where the tea plant is cultivated with peculiar care, the first gathering takes place at the end of the winter, when the leaves are young and tender, and are only a few days old: these, on account of their scarcity and dearness, are reserved for the wealthy, and called *imperial tea.* The second gathering is at the beginning of spring, when some leaves have attained their full size, and others are only expanding: all are gathered promiscuously, and afterwards sorted: the youngest especially are separated with great care, and often sold for the imperial. The third and last gathering takes place towards the middle of summer: the leaves are now fully expanded, of inferior quality, and are reserved for the common people. In China the leaves are probably collected in the same manner. There are two varieties of the tea plant—*T. viridis*, with broader leaves, and *T. bohea*—by some writers considered distinct species. Formerly, it was thought that green tea was gathered exclusively from *T. viridis;* but this is now doubtful; though it is certain there is what is called the *green tea district*, and the *black tea district;* and the varieties of the one differ from those of the other district. Doctor Abel was told, by competent persons, that either of the two plants will afford the black or green tea of the shops, but that the *T. viridis* is preferred for making green tea. The names given, in commerce, to the different sorts of tea, are unknown to the Chinese, the imperial excepted, and are supposed to have been applied by the merchants at Canton. The tea leaves, being gathered, are cured in houses which contain from five to ten or twenty small furnaces, about three feet high, each having at the top a large, flat, iron pan. There is also a long, low table, covered with mats, on which the leaves are laid, and rolled by workmen, who sit round it. The iron pan being heated to a certain degree by a little fire made in the furnace underneath, a few pounds of the fresh gathered leaves are put upon the pan: the fresh and juicy leaves crack when they touch the pan; and it is the business of the operator to shift them as quickly as possible with his bare hands, till they become too hot to be easily endured. At this instant, he takes off the leaves with a kind of shovel resembling a fan, and pours them on the mats: other operators, now taking small quantities at a time, roll them in the palm of their hands in one direction, while a third set are fanning them, that they may cool the more speedily, and retain their curl the longer. This process is repeated two or three times, or oftener, before the tea is put into the stores, in order that all the moisture may be thoroughly dissipated, and their curl more completely preserved. On every repetition, the pan is less heated, and the operation performed more closely and cautiously. The tea is then separated into the different kinds, and deposited in the store for domestic use or exportation. The different sorts of black and green arise not merely from soil, situation, or the age of the leaf; but after winnowing the tea, the leaves are taken up in succession as they fall; those nearest the machine, being the heaviest, are the *gunpowder tea;* the lightest, the worst, is chiefly used by the lower classes. That which is brought down to Canton then undergoes a second roasting, winnowing, packing, &c.; and many hundred women are employed for these purposes. As a more select sort of tea, the flowers of the *camellia sasanqua* appear to be collected. The leaves, indeed, of this plant are often used, and sometimes those of the other species of *camellia*, though that practice is rather to be considered in the light of adulteration. Several other plants appear to be used as substitutes for tea, as a species of moss, different sorts of ferns, &c.; and in Japan the leaves of the *olea fragrans* are used to give it a high flavor. The seeds of the tea plant, as well as of the camellias, and especially of the *C. oleifera*, are crushed for their oil, which is in very general use in the domestic economy of China. The black teas, usually imported by Europeans and Americans, are, beginning with the lowest qualities, *bohea*, *congo*, *campo*, *souchong*, *pouchong*, *pekoe;* the green teas are *twankay*, *hyson skin*, *young hyson*, *hyson*, *imperial*, and *gunpowder*. The effects of tea on the human system are those of a very mild narcotic, and, like those of any other narcotic taken in small quantities, exhilarating. The green varieties of the plant possess this quality in a much higher degree than the black, and a strong infusion of the former will, in most constitutions, produce considerable excitement and wakefulness. Of all narcotics, however, tea is the least pernicious, if indeed it be so in any degree. It acts, likewise, as a diuretic and a diaphoretic, and powerfully assists digestion. Most of the attempts to cultivate the tea plant in foreign countries have met with little success. Within the last few years, however, considerable efforts have been made, by the Dutch government of Java, to produce tea in that island, with the assistance of Chinese cultivators, with some prospect of success; and the experiment has been made to propagate the tea shrub in Brazil, also with the aid of Chinese laborers. Tea, as we have said, was unknown in Europe until the middle of the 17th century, when a small quantity was first imported by the Dutch. In 1664, the English East India company imported two pounds and two ounces of tea, as a present to the king. In 1800, the annual consumption in England was somewhat above twenty million pounds, since which time it has been gradually declining, owing in part to the increase of duty in 1806 and 1819, and in part to the monopoly of the East India company. The present consumption is estimated at about twenty-five million pounds, which, for a population of sixteen and a half millions, gives but one pound nine ounces per head, while in 1800 it was one pound thirteen and a half ounces. This monopoly renders the prices of tea higher, the qualities inferior, and the varieties fewer, in England, than on the continent, or in the U. States; so that, while about a dozen kinds of tea are quoted in the Hamburg and New York markets, not more than six or seven are to be met with in England. Imperial is unknown there, and pekoe and gunpowder are found only in small quantities. Russia and Holland are the only countries, on the continent of Europe, in which the consumption of tea is considerable. In 1830, the imports into Russia amounted to 5,563,444 pounds, almost entirely of the black sorts. It is carried over land from Kiachta to Tomsk, and thence, partly by land and partly by the rivers, to Novgorod. The consumption in Holland amounts to about 2,700,000 pounds a year. In France, tea is not generally used, and the consumption is estimated not to exceed 230,000 pounds. The importations into Hamburg vary from 1,500,000 to 2,000,000 pounds, the greater part of which is forwarded to the interior of Germany. The imports into Venice and Trieste do not exceed seven hundred weight. The consumption of the U. States fluctuates from about 6,000,000 to 8,000,000 pounds. The amount imported in the year ending September 30, 1830, was 8,609,415 pounds; exported 1,736,324 pounds. The duties, by the tariff of 1832, cease entirely on the 3d of March, 1833. The consumption of this country has remained nearly stationary for some years, while that of coffee has increased with great rapidity. The prices of the different sorts of tea quoted in the Boston price-current for July 30, 1832, are, bohea, 24 to 28 cents per pound; souchong, 35 to 37; hyson skin and tonkay, 50 to 55; young hyson, 70 to 77; Hyson, 80 to 85; imperial, 1.08 to 1.12; gunpowder, 1.10 to 1.15. Pouchong and pekoe are not quoted: the former is somewhat higher than souchong; the latter is higher than gunpowder.

Teak-Wood (*tectona grandis*); one of the largest trees known, and one of the most interesting, from the properties of the wood. It is referred to the natural family *verbenaceæ*. The young branches are quadrangular and jointed; the leaves opposite, obovate and downy beneath, somewhat declining, on young trees from one to two feet long, and eight to sixteen inches in breadth. The flowers are small, white and fragrant, disposed in widely spreading terminal panicles. The calyx is tomentose, and the corolla hardly longer than the calyx. The fruit is a one-celled drupe. This tree abounds in the extensive forests of Java, Ceylon, Malabar, Coromandel, &c., but especially in the empires of Birmah and Pegu, from which countries Calcutta and Madras draw all their supplies of ship timber. The wood is light and easily worked, and, at the same time, strong and durable. It is considered superior to all others for ship building, and is, besides, extensively used in the East in the construction of houses and temples. This tree has been introduced into the British possessions in India, and is now planted, with a view to timber, in the mountainous parts of Bengal. Its cultivation has also been recommended in the West Indies; and some circumstances seem to encourage the idea that it will succeed beyond the tropics. The leaves furnish a purple dye, which is employed for coloring cottons and silks.

Teal. This name is given to some small species of duck, resembling, in their habits and anatomical characters, the domestic species. Teal frequent the fresh waters of the interior, living on aquatic plants and seeds, and rarely visit the sea-shore. The flesh is dry and difficult of digestion, but, notwithstanding, is in great request. We have two species in the U. States. The green-winged teal (*anas crecca*) is distinguished by a large spot of brilliant green upon the wing. It is found in all the northern parts of the globe. In Europe, it breeds so far south as France, but is not known to breed in the U. States.—The blue-winged teal (*A. discors*) is peculiar to America. It is the first of our ducks to return from the north on the approach of winter, usually making its appearance in the Delaware early in September, and proceeding farther south with the first frosts.

Tear, and Lachrymal Organs. The

limpid fluid secreted by the lachrymal glands, and flowing on the surface of the eyes, is a little heavier than water, and contains much pure soda, also muriate, carbonate and phosphate of soda, and phosphate of lime. The organs which secrete this liquid are the lachrymal glands, one of which is situated in the external angle of each orbit, and emits six or seven excretory ducts, which open on the internal surface of the upper eyelid, and pour forth the tears. The tears have mixed with them an arterious, roscid vapor, which exhales from the internal surface of the eyelids, and external of the *tunica conjunctiva*, into the eye. Perhaps the aqueous humor also transudes through the pores of the cornea on the surface of the eye. A certain part of this aqueous fluid is dissipated in the air; but the greatest part, after having performed its office, is propelled by the orbicular muscle, which so closely compresses the eyelid to the ball of the eye as to leave no space between, except at the internal angle, where the tears are collected. From this collection the tears are propelled through the lachrymal canals into the lachrymal sac, and flow into the cavity of the nostrils, where they are partly thrown out, partly swallowed. If the passage of the tears from the eyes to the nose is disturbed, or prevented (e. g. by a stoppage of the lachrymal duct), they flow down the cheeks, and also collect in the lachrymal sac, extend it, are here changed in their quality, and cause an inflammation, which generally brings on ulceration, and, if not attended to, even affects the bones. This is the disease known by the name of *lachrymal fistula*. To cure it, an operation is required, by which a new duct is formed for the tears to enter the nose. The tears have no smell, but a saltish taste, as people who weep perceive. They are of a transparent color, and aqueous consistence. The quantity, in its natural state, is just sufficient to moisten the surface of the eye and eyelids; but from sorrow, or any kind of stimulus applied to the surface of the eye, so great is the quantity of tears secreted, that the *puncta lachrymalia* are unable to absorb them. Thus the greatest part runs down from the internal angle of the eyelids, in the form of great and copious drops, upon the cheeks. A great quantity also descends through the lachrymal passage into the nostrils; hence those who cry have an increased discharge from the nose.—The use of the tears is to prevent the pellucid cornea from drying and becoming opaque, or the eye from concreting with the eyelids. They prevent that pain which would otherwise arise from the friction of the eyelids against the bulb of the eye, from continually winking. They wash and clean away the dust of the atmosphere, or any thing acrid that has fallen into the eye. Weeping relieves the head of congestions.

Teasel (*dipsacus*). This plant bears a general resemblance to the thistle, and might very readily be mistaken for a compound flower; but each floret is provided with its calyx, and the four stamens are not united. The corolla is tubular, and divided into four lobes at the summit; the florets are disposed in large, oval, conic receptacles, and are separated by long, projecting scales or chaffs.—The cultivated teasel (*D. fullonum*) has a herbaceous, upright, prickly stem; the leaves are connate, oval-lanceolate, and likewise prickly beneath, on the principal nervures. The florets are blue, and expand successively by zones. It has been considered a variety of the wild teasel (*D. sylvestris*), a common plant in many parts of Europe; but it differs in having the scales or chaffs more rigid, recurved, and forming a little hook at the extremity. This conformation is peculiarly suitable for raising the nap upon woollen cloths; and for this purpose the heads are fixed round the circumference of a large, broad wheel, which is made to turn round, and the cloth is held against them, or they are set into flat boards like cards. This plant is, in consequence, cultivated for manufacturing purposes, both in Europe and now in the U. States, and has become an article of considerable importance. The seeds are sown in March, on well prepared, strong, rich land, broad-cast, and at the rate of one peck to the acre. They are hoed, like turnips, to a foot distance; and the second year, in August, the heads are fit to cut. They are sold by the bundle of twenty-five in each, and the ordinary produce is 160 of such bundles to the acre. We have no native species of this genus in the U. States; but the wild teasel is naturalized in some districts.

Technical (from τεχνη, art) signifies, in general, that which belongs peculiarly to art, or to any branch of it in particular. A *technical* term is an expression peculiar to an art or profession. In the fine arts, the *technical* is contradistinguished to the *æsthetical*, comprising every thing relating to the material execution of works of art.

Technology (from τεχνη, art, and λογος, word, science) is the science which treats of the arts, particularly the mechanical. Technology may be divided into two kinds, a higher and lower, of which the latter treats of the various arts themselves, and their principles, their origin, history, improvement, &c.; the former, of the connexion of the arts and trades with the political condition of a nation, and the important influence which they have exercised ever since the mechanical occupations have come to honor; i. e. since the growth of free cities in the middle ages.

Tecumseh, a celebrated Indian chief, was born on the banks of the Scioto river, near Chilicothe, Ohio. His father was a Shawanee warrior of distinction, who was killed at the battle of Kenawa, while Tecumseh was still a child. His mother is variously stated to have been a Shawanee, a Creek and a Cherokee. In his youth, Tecumseh was remarkable for temperance and integrity; but he did not at first display the valor which afterwards distinguished him. He first fought in an engagement with the Kentucky troops, on the banks of the Mud river, in the heat of which he fled from the field. But he soon retrieved his reputation, and, at the age of twenty-five, was regarded as one of the boldest of the Indian warriors. His enmity against the whites was constant and bitter. In all the terrible incursions of the savages, by which the first settlers of Kentucky were harassed, he was conspicuous; but he rarely appropriated to his own use any of the booty thus obtained; the love of glory, and the desire of sating his vengeance on the whites, being his predominant passions. At length, in conjunction with his brother, the famous prophet Elskatawa, he succeeded in effecting, to a considerable extent, a union of the savages, and producing so strong a fermentation among them as to render it necessary for the government of the U. States to take decisive measures. Accordingly, general Harrison, the governor of Ohio, commenced offensive operations, and, Nov. 7, 1811, defeated the forces under the command of the prophet, in the well-known battle of Tippecanoe. At the time of the action, Tecumseh was absent in the south, whither he had gone for the purpose of prosecuting his plans of union. Soon after his return, in 1812, he joined the British, then at war with the U. States, and received the rank of brigadier-general in the royal army. He was extremely useful to his allies in raising and retaining the Indian forces. During the first months of the war, he was principally occupied in recruiting; but he was also present at the two sieges of fort Meigs, and, May 5, 1812, commanded the coöperating savage force on the south-east side of the river. His career, however, was soon cut short. In the decisive battle of the Moravian towns, he led the right wing of the allied army; and whilst all were flying around him, he continued to press on with a chosen band of followers, until he fell; by whose hand has never been satisfactorily ascertained. Colonel Richard M. Johnson, who commanded the mounted infantry, against which he was rushing at the time, has been commonly designated as the author of his death, but without adequate proof.—Tecumseh was a remarkable man, fitted for attaining greatness both in peace and war. His eloquence was vivid and powerful. He was sagacious in contriving and accomplishing his objects, and, by his address, obtained an unlimited influence over his savage brethren. Throughout life he was exemplary in his habits of temperance, and adherence to truth. He was disinterested, generous, hospitable and humane. He married at a mature age, in consequence of the persuasions of his friends, and left one child. In person, he was about five feet ten inches high, with handsome features, a symmetrical and powerful frame, and an air of dignity and defiance.

Te Deum Laudamus, or, still more abbreviated, **Te Deum** (Thee, God, we praise), is the beginning of the hymn or song of thanksgiving usually ascribed to St. Augustine and St. Ambrose. It is sung on particular occasions, as on the news of victories and on high festival days, in Catholic and also in many Protestant churches. Among the modern composers of this hymn are Hasse, Naumann, Haydn, Danzi and Schicht.

Teeth (*dens*, a tooth; quasi *edens*, from *edo*, to eat); small bones fixed in the *alveoli* of the upper and under jaw. In early infancy, nature designs us for the softest aliment, so that the gums alone are then sufficient for the purpose of manducation; but, as we advance in life, and require a different food, she provides us with teeth. These are the hardest and whitest of our bones, and, at full maturity, we usually find thirty-two in both jaws, viz. sixteen above, and as many below. Their number varies, indeed, in different subjects; but it is seldom seen to exceed thirty-two, and it will very rarely be found to be less than twenty-eight.

Each tooth may be divided into two parts, viz. its body, or that part which appears above the gums, and its fang, or root, which is fixed into the socket. The boundary between these two, close to the edge of the gum, where there is usually a small circular depression, is called the *neck* of the tooth. Every tooth is composed of its cortex, or enamel, and its internal bony substances. The enamel, or, as it is sometimes called, the vitreous part of the tooth, is a very hard and compact substance, of a white color, and peculiar to the teeth. It is found only upon the body of the tooth, covering the outside of the bony or internal substance. When broken, it appears fibrous or striated, and all the *striæ* are directed from the circumference to the centre of the tooth. The bony part of a tooth resembles other bones in its structure, but is much harder than the most compact part of bones in general. It composes the inner part of the body, and the whole of the root of the tooth. Each tooth has an inner cavity, supplied with blood-vessels and nerves, which pass through the small hole in the root. In old people this hole sometimes closes, and the tooth becomes then insensible. The teeth are invested with periosteum from their fangs to a little beyond their bony sockets, where it is attached to the gums. This membrane seems to be common to the tooth which it encloses, and to the sockets which it lines. The three classes into which the teeth are commonly divided, are incisors, canine, and molars, or grinders. The incisors are the four teeth in the fore part of each jaw; they derive their name from their use in dividing and cutting the food in the manner of a wedge, and have each of them two surfaces, which meet in a sharp edge. The canine or *cuspidati* (eye-teeth) are the longest of all the teeth, deriving their name from their resemblance to a dog's tusk. There is one of these teeth on each side of the incisors, so that there are two in each jaw. Mr. Hunter remarks, that we may trace in them a similarity in shape, situation and use, from the most imperfect carnivorous animal—which we believe to be the human species—to the lion, which is the most perfectly carnivorous. The molars, or grinders, of which there are ten in each jaw, are so called, because, from their size and figure, they are calculated for grinding the food. The canine and incisors have only one fang; but the three last grinders in the under jaw have constantly two fangs, and the same teeth in the upper jaw, three fangs. Sometimes these fangs are divided into two points near their base. The grinders likewise differ from each other in appearance. The last grinder is shorter and smaller than the rest, and from its coming through the gums later than the rest, and sometimes not appearing till late in life, is called *wisdom-tooth*. The variation in the number of teeth usually depends on these wisdom-teeth. The danger to which children are exposed during the time of dentition, arises from the pressure of the teeth in the gum, so as to irritate it, and excite pain and inflammation. The effect of this irritation is, that the gum wastes, and becomes gradually thinner at this part, till, at length, the tooth protrudes. In such cases, therefore, we may, with great propriety, assist nature by cutting the gum. These teeth are twenty in number, and are called *temporary* or *milk* teeth, because they are all shed between the age of seven and fourteen, and are supplied by others of a firmer texture, with large fangs, which remain till they become affected by disease, or fall out in old age, and are therefore called the *permanent*, or *adult* teeth. Besides these twenty teeth, which succeed the temporary ones, there are twelve others to be added to make up the number thirty-two. These twelve are three grinders on each side in both jaws; and in order to make room for this addition, we find the jaws grow as the teeth grow, so that they appear as completely filled with twenty teeth, as they are afterwards with thirty-two. Hence, in children, the face is flatter and rounder than in adults. The *dentes sapientiæ*, or wisdom-teeth, do not pass through the gum till between the age of twenty and thirty. They have, in some instances, been cut at the age of forty, fifty, sixty, and even eighty years; and sometimes do not appear at all. Sometimes, likewise, a third set of teeth appears, about the age of sixty or seventy. The teeth are subject to a variety of accidents. Sometimes the gums become so affected as to occasion them to fall out; and the teeth themselves are frequently rendered carious by causes which have not hitherto been satisfactorily explained. The disease usually begins on that side of the tooth which is not exposed to pressure, and gradually advances till an opening is made into the cavity: as soon as the cavity is exposed, the tooth becomes liable to considerable pain, from the air coming into contact with the nerve. The enamel of the teeth, as we have already said, is very hard, but liable to be cracked by the pressure of very hard substances, or by exposure to great heat or cold, and, more peculiarly, by sudden changes from one to the other. The bony substance below, being thus exposed, begins to decay; the nerve and blood-vessels are at length laid bare, and tooth-ache ensues. Rheumatism, gout, and venereal disorders, exert a very prejudicial influence on the teeth. To preserve the teeth, we must guard against too hot or too cold drinks; violent changes of temperature; biting of very hard substances, as in cracking nuts, also biting off threads, and untying knots with the teeth, as the former injures the enamel, the latter tends to loosen the teeth in their sockets. Acids, of all sorts, particularly the stronger ones, injure the enamel. Therefore, all tooth-washes which contain them are eventually prejudicial to the teeth, although the immediate effect is to clean and whiten them. Rough-pointed substances also injure the enamel, so that we should avoid the use of metallic tooth-picks, and tooth-powder made of pumice stone, coral, cream of tartar, &c. People who eat much meat and little bread, or have a bad digestion, or smoke tobacco, find that a deposit of earthy particles collects around the teeth, and forms tartar, particularly about the parts which are least exposed to the action of the food—the lower and inner parts, near the gums. The gums gradually separate from the teeth; the consequence is, that these decay, and the breath is rendered offensive. To avoid these effects, the teeth should be daily cleaned with tepid water and a hard brush. A proper powder should also be occasionally applied to them. Where tartar has been formed, it should be removed by the dentist, and its return carefully guarded against. Decay can often be checked by the removal of the parts which have turned black, and filling the cavity with gold, so that the teeth may be preserved for many years or for life. Every one should have his teeth examined at intervals of a few months, to detect incipient decay. Artificial teeth are often inserted to remedy, as far as possible, the loss of the natural ones. These were formerly taken from the corpses of healthy men (though this point of healthiness was often far too little attended to): they are now, more generally, prepared from the teeth of the walrus or sea-cow, from ivory, from porcelain, &c. Artificial teeth are either secured in the stumps of natural ones, by means of a gold or silver support, or, where such stumps do not exist, they are fastened to neighboring teeth by gold or silk thread. The porcelain teeth have an advantage over the other kinds, which lose their color, and acquire a disagreeable smell, in the course of time. Their hardness may, perhaps, however, make them injurious to the contiguous natural teeth. Besides the accidental means by which the teeth are affected, old age seldom fails to bring with it sure and natural causes for their removal. The *alveoli* fill up, and the teeth, consequently, fall out. The gums then no longer meet in the fore part of the mouth, the chin projects forwards, and, the face being rendered much shorter, the whole physiognomy appears considerably altered. The great variety in the structure of the human teeth, fits us for a variety of food, and, when compared with the teeth given to other animals, may, in some measure, enable us to explain the nature of the aliment for which man is intended by nature. Thus, in ruminating animals, we find incisors only in the lower jaw, for cutting the grass, and molars for grinding it; in graminivorous animals, we see molars alone; and in carnivorous animals, canine teeth for catching at their prey, and incisors and molars for cutting and dividing it. But as man is not designed to catch and kill his prey with his teeth, we observe that our canine are shaped differently from the fangs of beasts of prey, in whom we find them either longer than the rest of the teeth, or curved. The incisors, likewise, are sharper in those animals than in man. Nor are the molars in the human subject similar to the molars of carnivorous animals: they are flatter in man than in these animals; and in the latter, we likewise find them sharper at the edges, more calculated to cut and tear the food, and, by their greater strength, capable of breaking the bones of animals. From these circumstances, therefore, we may consider man as partaking of the nature of these different classes; as approaching more to the carnivorous than to the herbivorous tribe of animals; but, upon the whole, formed for a mixed aliment, and fitted equally to live upon flesh and upon vegetables. Those philosophers, therefore, who would confine a man wholly to vegetable food, do not seem to have studied nature. As the molars are the last teeth that are formed, so they are usually the first that fall out. This would seem to prove that we require the same kind of aliment in old age as in infancy. Besides the use of the teeth in mastication, they likewise serve a secondary purpose, by assisting in the articulation of the voice. Albin, Hunter, Blake, Fox, and many others, have written on the teeth.—See, also, A. Serres, *Essai sur l'Anatomie et la Physiologie des Dents, ou Nouvelle Théorie de la Dentition* (Paris, 1817). For zoölogists, Cuvier's *Des Dents des Mammifères* (Paris, 1825) is of much interest.

Teflis, or **Tiflis**; a city in Asia, capital of Georgia; lat. 41° 43′ N.; lon. 62° 40′ E.; population, about 15,000. It was founded in 1063, and is situated on the banks of the Kur, at the extremity of a defile formed by two ranges of mountains. The streets are narrow, filthy and dusty. Since the conquest of Georgia by the Russians, in 1801, Teflis has been the residence of their governor and commander-in-chief. The city contains a large caravansary, an hospital, an arsenal, and a Catholic church, a number of Armenian and Greek churches, several of them fine buildings. The houses are built of brick, mingled with stones and mud, with doors and windows exceedingly small. Many of the dwellings are mere mud huts. Teflis has been long celebrated for its baths, which are situated at one extremity of the bazar. They are ten in number, and are the daily resort of both sexes, as places of luxury and amusement.

Tegernsee; a village, castle and royal lordship (63 square miles, with 3200 inhabitants), 33 miles distant from Münich, on the lake of Tegern. It is a very romantic spot, surrounded by high mountains, and often visited by the royal family. A remarkable illumination took place on the mountains, in the reign of Maximilian I, when the names of some of his princely guests were presented by night, in characters of fire, on the sides of the heights. The fires were kept up by immense piles of wood, arranged by geometrical calculation, and were so large that half an hour was required to walk from the bottom to the top of a single letter. Near Tegernsee, fine marble is found. Naphtha is also collected here.

Tegnér, Isaiah, bishop of Wexiœ, in Smæland, knight of the order of the North Star, one of the most celebrated living poets of Sweden, was born in the province of Wermeland, in 1782. In 1812, he was appointed professor of Greek literature at the university of Lund, and, in 1824, was created bishop of Wexiœ. Among his poems, most of which have appeared in the Iduna, a periodical edited by Tegnér, in conjunction with his friend Geijer, professor at Upsal, are the Sage (*Den Vise*), a didactic lyrical poem; *Svea* (Sweden), a patriotic poem; *Nattwardsbarnen*, an idyl; *Frithiofs-Saga*, which is drawn from old northern ballads (the two latter have been translated into German); and *Axel*, a narrative poem, abounding in beautiful passages. A lively, though not deep sensibility, a rich vein of wit, and an active and fertile imagination, which is sometimes so profuse of imagery as to dazzle rather than illustrate, are the characteristics of his muse.

Teheran, or **Tehraun**; a city of Persia, in Irak Agemi; lat. 35° 40′ N.; lon. 50° 52′ E.; population, in the winter, about 60,000. During the two last reigns, it has been the residence of the sovereign. Its situation is low and unhealthy. On the south are the ruins of the immense and ancient city of Rai, and on the north and east, the lofty mountain ranges of Elburz and Demavend. It is four miles in circuit, surrounded by a strong wall, built of bricks baked in the sun, flanked by numerous towers, with a broad dry ditch, with a glacis between it and the wall. It has six gates, seven mosques, three colleges, and numerous baths and caravansaries. The houses are built of unburnt brick, and the city has a mud-like appearance. It contains no edifice of importance except the *ark*, which combines the character of a citadel with a royal palace, and has considerable strength. During the summer months, it is very unhealthy; and in that season the king pitches his tents in the plains of Sultania, or Unjan, and most of the inhabitants follow the royal camp; so that Teheran cannot then contain more than 10,000 persons.

Tehuantepec; a seaport of Mexico, in the state of Oaxaca, on the Pacific ocean, at the mouth of the Chimalapa; lat. 16° 16′ N.; lon. 94° 58′ W. It is situated on a large gulf. The port is impeded by a dangerous shoal. The isthmus of Tehuantepec, which separates the Pacific ocean from the gulf of Mexico, is 125 miles across. Examinations made in 1830, for the purpose of ascertaining the practicability of cutting a navigable canal across the isthmus, gave unfavorable results.

Teignmouth, John Shore, lord, a native of Teignmouth, in Devonshire, born in 1751, was sent early to India, as a writer in the service of the East India company, where he rose to the chair, in Bengal. He was intimate with Mr. Hastings, and, under his government, filled several important offices. In 1793, he succeeded to be governor of Bengal, but only remained in that situation till his successor arrived from England. On the death of his friend sir W. Jones, he was elected president of the Asiatic society, in which capacity he delivered a eulogy on his predecessor, which was printed in the Transactions of the society, as are several others of Mr. Shore's papers. In 1793, he was made a baronet, and, some time after his return, in 1797, he was created a peer of Ireland, by the title of baron Teignmouth. He has given to the world Memoirs of the Life, Writings and Correspondence of Sir W. Jones (4to., 1801), and the Works of Sir W. Jones (1807, 5 vols., 4to., and afterwards in 10 vols., 8vo.). Lord Teignmouth instituted the British and foreign Bible society, of which he is president. He has published, on that subject, a Letter to the Reverend Christopher Wordsworth (8vo., 1810). His attention has also been much engaged on the subject of the following publication:—Considerations on communicating to the Inhabitants of India the Knowledge of Christianity (1811). His lordship is an active member of the African institution.

Tekeli, or **Tőkőly**, Emmerich, count of, a Hungarian noble, celebrated for his efforts to deliver his country from the dominion of Austria, was the son of Stephen, count Tököly, a noble Lutheran, who, after the execution of several Hungarians for a conspiracy against Austria, placed himself at the head of the malcontents. General Heister was sent against him, and besieged him in his castle. The count died during the siege, but had taken such steps as enabled his son, then fifteen years of age, to escape. Emmerich fled to Transylvania, where his courage and good conduct gained him the favor of the prince, who gave him the command of a body of troops despatched to aid the Hungarian malcontents. The Hungarians chose him, in 1678, commander-in-chief, and Tőkőly, determined to allow himself no rest until he had freed his country from the German yoke, broke into Upper Hungary, at the head of a continually increasing body of forces, captured several fortresses and the mining towns, devastated Moravia, and, assisted by France and the Porte, penetrated into Upper Austria. The emperor consented to redress several grievances at the diet of Edenburg (1681); but Tőkőly persisted in his opposition, and put himself under the protection of the sultan Mohammed IV, by whom he was declared king of Hungary. A war between the emperor and the Porte was the consequence, in which the Turks advanced (1683) as far as Vienna, but were totally defeated before that city. The grand-vizier wished to lay the whole blame of the defeat upon Tőkőly; but the latter hastened to Adrianople, and vindicated his conduct so completely to the sultan, that the grand-vizier was strangled, and Tőkőly received assurances of support. The count continued the war, but without success, lost several decisive battles, and was therefore arrested by the Turks. His army now dispersed; and when Tőkőly was set at liberty, as innocent of the charges brought against him, he found himself destitute of followers, and unable to effect any thing of importance. Fortune, however, once more smiled upon him, and he was designated by the Porte to be prince of Transylvania. He penetrated into that country, routed the imperial general Heusler, and was elected prince by the Transylvanians; but Louis, margrave of Baden, compelled him to retire. Thus alternately exposed to the caprices of fortune and of the Porte, he was once more carried in chains to Adrianople, and soon after named prince of Widdin. He returned to Turkey after the peace of Carlowitz (1699), and ended his unquiet life near Nicomedia, in Asia Minor, in 1705. Tőkőly was a man of lofty courage, of great sagacity and foresight, and of an imperturbable presence of mind.

Telamon. (See *Argonauts.*)

Telegraph (from τηλε, at a distance, and γραφω, to write); the name given to a piece of mechanism for the rapid communication of intelligence by signals. (See *Signals*, and *Chappe.*) The most simple contrivance of this sort consists of an upright post of moderate height, with two movable arms fixed on a common pivot, each of which may be exhibited in various positions, each position indicating a word or sentence. The universal telegraph, invented by colonel Pasley in 1822, has two arms, each of which can exhibit seven positions, with an indicator or mark on one side of the post, for the purpose of distinguishing the positions more accurately. This machine is capable of indicating only twenty-eight different combinations, which are, however, found to be sufficient for telegraphic communication, whether by the alphabetical method, or in reference to a telegraphic dictionary of words and sentences. Several telegraphic dictionaries have been composed. A series of telegraphs are placed at intervals, and information is thus communicated with great rapidity. Twenty-seven telegraphs convey information from Paris to Calais in three minutes; twenty-two from Paris to Lisle in two minutes; forty-six from Strasburg to Paris in six and a half minutes, and eighty from Paris to Brest in ten minutes. At the time of the French expedition to Algiers, nocturnal telegraphs were erected, with lanterns of powerful magnifying glasses, and strong reflectors, and lighted with gas.—See Parker's *Telegraph Vocabulary* (Boston, 1832). A portable telegraph, which may be used by night and by day, has recently been invented in France, and has received the name of *Aërographe*.

Telemachus; a son of Ulysses and Penelope. He was still in the cradle when his father went, with the rest of the Greeks, to the Trojan war. At the end of this celebrated war, Telemachus, anxious to see his father, went to seek him; and, as the place of his residence, and the cause of his long absence, were then unknown, he visited the court of Menelaus and Nestor to obtain information. He afterwards returned to Ithaca, where the suitors of his mother Penelope had conspired to murder him; but he avoided their snares, and, by means of Minerva, he discovered his father, who had arrived in the island two days before him, and was then in the house of Eumæus. With this faithful servant and Ulysses, Telemachus concerted how to deliver his mother from the importunities of her suitors; and it was effected with great success. After the death of his father, Telemachus went to the island of Ææa, where he married Circe, or, according to some, Cassiphone, the daughter of Circe, by whom he had a son called Latinus. He some time after had the misfortune to kill his mother-in-law Circe, and fled to Italy, where he founded Clusium. Telemachus was accompanied in his visit to Nestor and Menelaus by the goddess of wisdom, under the form of Mentor. It is said that when a child, Telemachus fell into the sea, and that a dolphin brought him safe to shore, after he had remained some time under water. From this circumstance Ulysses had the figure of a dolphin engraved on the seal which he wore on his ring. (See *Fénélon*.)

Telemann, Gio. Philip; one of the greatest and most voluminous musical composers, who flourished in Germany during the former portion of the last century. He was born at Hildesheim, in 1681. In 1740, his overtures, on the model of those of Lulli, amounted to six hundred. The list of his printed works, which appeared in Walther's Musical Lexicon in 1732, extended to twenty-nine; and fifteen more are specified in Gerber's Continuation of Walther; but double the number of those printed were long circulated in manuscript from the music shops of Leipsic and Hamburg. His later compositions are said to be pleasing, graceful and refined. Telemann, who lived to a great age, drew up a well-written account of his own life, in the earlier part of which he was the fellow-student and intimate acquaintance of Handel. He died in 1767, at Hamburg.

Teleology (from τελος, the end, aim, and λογος, science); the doctrine of final causes. It treats of the wise and benevolent ends shown in the structure of individual creatures, and in their connexion, and in the connexion and consequences of events, from which it deduces the existence and character of the Creator. Delightful as it is to trace the proofs of wisdom and benevolence in the creation around us, we should be careful not to narrow the purposes of God to our own notions, not to be illiberal towards those who differ from us, nor to conceive that the earth was made solely for the use of man—a very confined, but too common opinion.

Telescope (from τηλε, at a distance, and σκοπεω, to see); an optical instrument, employed for viewing distant objects, by increasing the apparent angle under which they are seen without its assistance, whence the effect on the mind of an increase in size, or, as commonly termed, a *magnified representation*. (See *Optics*.) The telescope is perhaps one of the most important inventions of science, as it unfolds to our view the wonders of the heavens, and enables us to obtain the data for astronomical and nautical purposes. As the use of the instrument depends upon the proportionate distance of the glasses, and this distance requires to be changed to suit the nearness or remoteness of the object, and the vision of the observer, the tube of the telescope is so contrived as to admit of being lengthened and shortened, according to circumstances. The invention of the telescope is ascribed to different persons, among whom are John Baptista Porta, Jansen of Middleburg, and

Galilei. The time of its first construction is considered to have been about 1590; but, in 1608 and 1609, we find these instruments for sale at very high prices by Dutch opticians; and in the latter year, Galilei constructed one without having seen those of the Dutch, by fitting a plano-convex and a plano-concave lens in a tube of lead. The simplest construction of the telescope consists merely of two convex lenses, so combined as to increase the apparent angle under which the object is seen. The lenses are so placed that the distance between them may be equal to the sum of their focal distances. The lens nearest the eye is called the *eye-glass*, and that at the other extremity of the tube the *object-glass*. Objects seen through this telescope are inverted, and on that account it is inapplicable to land observation; but at sea it is occasionally used at night and in hazy weather, when there is little light, and is, therefore, sometimes called the *night telescope*. The *astronomical telescope* is constructed in this manner, as the inversion of the object is immaterial in celestial observations. The common *day telescope*, or *spy-glass*, is an instrument of the same sort, with the addition of two, or even three or four other glasses, for the purpose of presenting the object in an erect position, increasing the field of vision, and diminishing the aberration caused by the dissipation of the rays. But the aberration and chromatic error of telescopes were not completely obviated until the invention of the *reflecting* and *achromatic telescopes*, which, when accurately constructed, present the object to the vision free from all distortion or chromatic dispersion. The *reflecting telescope* was invented by father Mersenne, a Frenchman, in the middle of the seventeenth century. Concave mirrors have the property of uniting the rays of light which proceed from any object, so as to form an image of that object at a certain point before the mirror. (See *Mirrors*.) If the distance of the object is so great, that the rays proceeding from it strike upon the mirror parallel to each other (which is the case with the heavenly bodies), the distance of the image is equal to half the radius of the sphere, of which the mirror is an arc, and the point where it is formed is called the *focus* of the mirror. (See *Burning Mirror*.) This property of the concave mirror has caused it to be used in the observation of the heavenly bodies; and the instrument constructed with such a mirror, is called a *reflecting telescope*. The simplest constructions of this kind were those in which the image, formed in the focus of the mirror, was used directly, and a convex eye-glass was employed to magnify the angle under which it was seen; and this, in fact, still continues to be the principle on which reflecting telescopes are constructed. But as this construction is attended with some difficulties in practice, Newton, and, since him, Cassegrain, Gregory, Hadley, Short, and the Herschels, have introduced some modifications in it. Newton, by means of a second reflection from a plane mirror, inclined at a certain angle, threw the image of the object into such a position in the tube of the telescope, that it could be easily examined from the side of the tube, through a plano-convex eye-glass, in whose focus it was situated. In the *Gregorian telescope* there is a large mirror with a small hole in its centre; opposite to this is placed a second small mirror in the axis of the larger one, and at a distance from it a little more than the sum of their focal distances. By means of this construction the image formed by this double reflection is viewed through one or more eye-glasses, fixed in the direction of the opening, and, therefore, the observer is stationed in a line with the object; while, in the *Newtonian telescope*, he is at right angles to it. The *Cassegrainian* is constructed in the same way as the Gregorian, with the exception of having a small convex instead of a concave speculum. Herschel gave the mirror such a position that its focus should fall directly under the edge of the upper aperture, so that the observer, in viewing the image, should not intercept the light: this he called a *front-view telescope*. It is plain that the size of the mirror, and, consequently, its focal distance, have an effect upon the magnitude of the image; and modern astronomers have, therefore, employed some instruments of this kind of great bulk. Herschel's gigantic telescope, erected at Slough, near Windsor, was completed August 28, 1789; and on the same day the sixth satellite of Saturn was discovered. The diameter of the polished surface of the speculum was forty-eight inches, and its focal distance forty feet. It weighed 2118 pounds, and was placed in one end of an iron tube four feet ten inches in diameter. The other end was elevated towards the object, and had attached to it an eye-glass, in the focus of the speculum, as above mentioned. The observer was mounted in a gallery, movable with the instrument, and having his back to the object. The light obtained from so large a surface was truly surprising, and enabled objects, otherwise invisible, to become extremely interesting. (A full description of this instrument, illustrated with eighteen plates, may be found in the Transactions of the Royal Society for 1795.) The frame of this instrument having become much decayed, it has been taken down, and another, of twenty feet focus and eighteen inches diameter, erected in its place (1822), by the distinguished J. F. W. Herschel, son of sir William. The largest front-view telescope, at present in England, is that erected at the royal observatory at Greenwich, by Mr. Ramage, in 1820. The diameter of the reflector is fifteen feet, and its focus is twenty-five feet. Schröter had an excellent telescope of this kind at Lilienthal, of twenty-five feet focus, by which the Milky Way was separated into innumerable small stars. Schrader, at Kiel, had a similar instrument of twenty-five feet focus, at the close of the last century. Another improvement has been recently introduced in the reflecting telescope, by making the speculum of platina, so that it will not suffer from rust. Having noticed some of the most valuable modifications of the *reflecting* telescopes, we now return to the *refracting* one. The most important improvement in this instrument consists in the formation of the object-glasses free from the errors of chromatic and spherical aberration, whence they have been denominated *achromatic* (α, without; χρωμα, color) *telescopes*, or, more properly, *aplanatic* (α, without; πλανος, error) *telescopes*. These are now made in such perfection, that they have, in some degree, superseded the reflecting telescopes; and the optical institute at Benedictbeuern (q. v.) provides observatories with such excellent dioptrical instruments, that the catoptric are little used. Dollond (q. v.) first made achromatic telescopes; Ramsden (q. v.), Reichenbach (q. v.), &c., have made the best. They are formed by employing a double object-glass, composed of two lenses of different refractive powers, which will mutually correct each other, and thus give a pencil of white light entirely colorless. Triple object-glasses are also used: one of the largest ever constructed was erected at the observatory of Dorpat, in 1824, and was made by Fraunhofer. (q. v.) The diameter of the object-glass has a clear aperture of nine and six tenths inches, and a focal distance of fifteen feet; but he afterwards constructed another, with a diameter of twelve Paris inches, and a focus of eighteen feet. Mr. Tully has also made one in England, of which the aperture of the object-glass is six eight-tenth inches, and the focal length twelve feet. It is now in possession of doctor Pearson. (See *Astronomical Transactions*, vol. ii.)

Telescope Carp. (See *Gold-Fish.*)

Tell, William, a peasant of Bürgeln, near Altorf, celebrated for his resistance to the tyranny of the Austrian governor Gessler or Gässler. Switzerland consisted of a great number of secular and ecclesiastical districts, belonging partly to the hereditary dominions of the house of Hapsburg, and partly to the German empire. Albert I, emperor of Germany, a grasping prince, eager to make territorial acquisitions, wished to unite the Forest Towns with his hereditary estates, and proposed to them to renounce their connexion with the empire, and to submit themselves to him as duke of Austria. They rejected his offers, and were in consequence so ill treated and oppressed by the imperial governors, that, in 1307, Uri, Schweitz and Underwalden formed a league, under the influence of three brave men, Walter Fürst (Tell's father-in-law), Arnold of Melchthal, and Werner Stauffacher. Tell was also one of this league. Gessler now pushed his insolence so far as to require the Swiss to uncover their heads before his hat (as an emblem of the Austrian sovereignty), and condemned Tell, who refused to comply with this mandate, to shoot an apple from the head of his own son. Tell was successful in his attempt, but confessed that a second arrow, which he bore about his person, was intended, in case he had failed, for the punishment of the tyrant, and was therefore retained prisoner. While he was crossing the lake of the Four Cantons, or lake of Lucerne, in the same boat with Gessler, a violent storm threatened the destruction of the skiff. Tell, as the most vigorous and skilful helmsman, was set free; and he conducted the boat successfully to the shore, but seized the opportunity to spring upon a rock, pushing off the barque. He had fortunately taken his bow with him; and when the governor finally escaped the storm, and reached the shore, Tell shot him dead, on the road to Küssnacht. The death of Gessler was a signal for a general rising, and a most obstinate war between the Swiss and Austria, which was not brought to a close until 1499. (See *Switzerland.*) Tell was present at the battle of Morgarten (q. v.), and is supposed to have lost his life in an inundation in 1350. Such is the story of William Tell, which, attested by chapels, by the designation of the rock on which he leaped, by paintings and other circumstances, has been called in doubt by many, but is sanctioned by John von Müller. Saxo Grammaticus relates a similar story of a Danish king, Harold, and a certain Tholko; but the tradition might have been transmitted from Germany to the north by means of the Hanse towns.—See Hagen's *Northern Heroic Romances*, in German (Breslau, 1814). There is one circumstance which may be considered sufficient to attest the truth of the main points of Tell's history. After the expulsion of the governors, and the demolition of their castles, it became customary among the Swiss to make pilgrimages to the place where Tell had leaped ashore; and in 1388, thirty years after his death, the canton of Uri erected a chapel (called *Tell's chapel*) on the rock upon which he had sprung, and caused a eulogy to be pronounced every year in memory of him. In the same year the spot was visited by 114 persons, who had been acquainted with Tell. All the old chronicles agree on this point; and Schiller, in his tragedy of William Tell, has accurately copied the accounts of Tschudi and Müller.—See Balthasar and Haller's *Defence of William Tell* (1772, new ed., 1824), and Hisely's *Dissertatio de Gul. Tellio* (Gröningen, 1824).

Tellier, François Michel le. (See *Louvois*.)

Tellier, Michael le, a distinguished Jesuit, was born in 1643, near Père, in Lower Normandy. He studied in the Jesuits' college at Caen, and entered the society at the age of eighteen. In 1709, he was chosen confessor to Louis XIV. He was a bitter enemy of the Jansenists; and his first act was the demolition of the celebrated house of the Port Royal. He then forced upon the nation the bull Unigenitus. (q. v.) His violence was the cause of much of the odium which the Jesuits soon after experienced, and paved the way for the abolition of their society. On the death of Louis, he was exiled, first to Amiens, and afterwards to La Flèche, where he died, in 1719.

Tellurism. (See *Magnetism, Animal*.)

Tellurium; the name of a metal discovered in 1782, and named by Klaproth from the earth in 1798. We shall first describe its ores. There are four :—1. *Native tellurium*. It is of a tin-white color, passing into lead-gray, with a shining, metallic lustre. It occurs in minute hexagonal crystals, possessed of regular cleavages; but their direction, owing to the minuteness of the crystals, has not been detected. It occurs also in crystalline grains, either aggregated, solitary, or disseminated. It yields to the knife, and is brittle; specific gravity 5.7—6.1. Exposed to the blow-pipe, it melts before ignition, and, on increasing the heat, it burns with a greenish flame, and is almost entirely volatilized in a dense white vapor, with a pungent, acrid odor, like that of horse-radish. It consists of tellurium 92.55, iron 7.2, gold 0.25. It has been found chiefly in Facebay, in Transylvania.—2. *Graphic tellurium*, or *graphic gold*. It is of a steel-gray color, generally splendent, but sometimes slightly tarnished externally. It occurs crystallized in the form of a right rhombic prism of 107° 44′. The crystals are commonly so arranged as to give to the whole row the appearance of a line of Persepolitan characters; specific gravity 5.7. Before the blow-pipe, on charcoal, it fuses into a dark-gray metallic globule, which finally is brilliant and malleable. It consists of tellurium 60, gold 30, and silver 10. It has been found only at Offenbanya, in Transylvania, in veins in porphyry.—3. *Yellow tellurium*. It is of a silver-white, passing into yellow and gray of different shades. It occurs in very small but well defined crystals, of which the primary form is a right rhombic prism of 105° 30′. It possesses a bright metallic lustre. It is soft, and somewhat sectile; specific gravity 10.6. It consists of tellurium 44.75, gold 26.75, lead 19.5, silver 8.5, sulphur 0.5. It has been found only at Nagyag, in Transylvania.—4. *Black tellurium*. It is of a color between iron-black and dark lead-gray. It is found crystallized in small tabular crystals, of which the primary form appears to be a right square prism. It yields to the knife with ease, and in thin laminæ is flexible; specific gravity 8.9. It consists of

Tellurium, ...	32.2
Lead, ...	54
Gold, ...	9
Silver, ...	0.5
Copper, ...	1.3
Sulphur, ...	3.

It has been found only at Nagyag, in Transylvania. The pure metal has the following properties:—It has a silver-white color, and a good degree of brilliancy. Its texture is laminated like antimony; specific gravity 6.115. It is very brittle, and may be easily reduced to powder.

It melts when raised to a temperature higher than the fusing point of lead. If the heat be increased a little, it boils and evaporates, and attaches itself in brilliant drops to the upper part of the retort in which the experiment is made. It is, therefore, next to mercury and arsenic, the most volatile of all the metals. When cooled slowly, it crystallizes. Tellurium combines with only one proportion of oxygen, and forms a compound possessing acid properties. But, as it also possesses alkaline properties, it is called *oxide of tellurium*. It is formed when tellurium is burnt in a crucible, or before the blowpipe: the white smoke evolved is the substance in question. It is also obtained by dissolving the metal in nitro-muriatic acid, and diluting the solution with a great quantity of water. A white powder falls, which is the oxide. It is easily melted by heat into a straw-colored mass of a radiated texture. It is composed of metal 100, and of oxygen 24.8. Tellurium burns spontaneously when brought into contact with chlorine gas. The *chloride of tellurium* is white and semi-transparent. When heated, it rises in vapor, and crystallizes. Iodine combines very readily with tellurium, when the two substances are brought into contact. Tellurium has the property of combining with hydrogen, and of forming a gaseous substance, to which the name of *tellureted hydrogen* is applied. It is formed by mixing together oxide of tellurium, potash, and charcoal, and exposing the mixture to the action of a red heat. It is transparent and colorless, and possesses a strong smell, resembling sulphureted hydrogen. It burns with a bluish flame, and oxide of tellurium is deposited. It is soluble in water, and gives that liquid a claret color. Tellurium appears to enter into combination with carbon. The compound is a black powder. It may be combined with sulphur by fusion.

Temeswar; formerly capital of the Bannat of Temeswar, which now forms a part of the kingdom of Hungary, now capital of the county of the same name in the circle beyond the Theiss, in Upper Hungary. It is situated on the river Bega, in a marshy and unhealthy district, is a royal free city, the residence of the imperial commander of the Bannat military district, and the see of a Greek bishop. Since 1718, when the Turks ceded the whole of the Bannat by the peace of Passarowitz (q. v.), the town has been much improved in appearance, and extended; and the fortifications have also been strengthened, so that it is now one of the most important fortresses of the Austrian empire. It contains 11,000 inhabitants, chiefly Germans and Servians, or Rascians (q. v.), who are engaged in manufactures, and carry on a brisk trade.

Tempe, Vale of; a beautiful and celebrated valley of Thessaly, on the Peneus, not far from its mouth, having mount Olympus on the north, and mount Ossa on the south. It is about five miles long, and of unequal breadth. It was much celebrated by the ancient poets; but modern travellers were long perplexed to find in so rugged and terrific a spot as the defile of Tempe, where it is crossed by the great road, the object of their unqualified panegyric. The fact is, that the vale of Tempe is distinct from the gorge or defile, being situated a little to the south-west. "The scenery of this beautiful valley," says a traveller, "fully gratified our expectations. In some places it is sylvan, calm and harmonious, and the sound of the water of the Peneus accords with the grace of the surrounding landscape; in others, it is savage, terrific and abrupt; and the river roars with violence, darkened by the frowns of stupendous precipices." The woods which once appear to have adorned this celebrated region, have been much diminished in the service of the neighboring cotton works; but the mountains on each side are truly sublime. In the centre of this romantic seclusion stands Ambelakia, a town inhabited by Greeks, with some Germans, who have established considerable cotton manufactures.

Tempelhoff, George Frederic von; a German officer, and writer on military tactics, born in 1737. After having studied at Frankfort on the Oder, and at Halle, he entered into a Prussian regiment of infantry as a corporal, and, in that capacity, served in Bohemia, in 1757. He afterwards entered into the artillery, and distinguished himself at the battles of Hochkirchen, Kunnersdorf, Torgau, &c., and at the sieges of Breslau, Olmütz, Dresden, and Schweidnitz. At the close of the second campaign, he was made a lieutenant; and, after the peace of 1763, he continued his studies at Berlin, and published some mathematical works, and also the Prussian Bombardier (1781, 8vo.), in which he reduced the doctrine of projectiles to scientific principles. He afterwards published the Elements of Military Tactics, developing the manœuvres and warlike operations of Frederic II. In

1790, he was promoted to a colonelcy; and, in the beginning of the revolutionary war with France, he had the command of all the Prussian artillery, and, in 1795, became chief of the third regiment of that corps. He died at Berlin, July 13, 1807. Tempelhoff published some important works besides those mentioned above, of which the best known is his History of the Seven Years' War in Germany, between the King of Prussia and the Empress Queen, &c. (1782—1801, 6 vols., 4to.), of which an English translation was made by general Lloyd.

Temperaments; those individual peculiarities of organization, by which the manner of acting, feeling and thinking of each person is permanently affected. The differences of sex, race, nation, family, and individual organization, operate upon the character of every individual from the moment of his birth; and the last mentioned is by no means the least important. The ancients distinguished four temperaments—the choleric or bilious, the phlegmatic, the melancholic, and the sanguineous, which derived their names from the supposed excess of one or other of the principal fluids of the human body—bile (χολη), phlegm, black bile (μελαινη, black, and χολη), and blood (*sanguis*). Modern writers have added the athletic temperament and the nervous temperament. The bilious or choleric temperament is accompanied with great susceptibility of feeling, quickness of perception, and vigor of action, and therefore indicates an elevated state of the organization: rapidity and strength, a lively imagination, violent passions, quickness of decision, combined with perseverance and inflexibility of purpose, with a tendency to ambition, pride, and anger, but also to magnanimity and generosity of sentiment, characterize the bilious man. These moral characteristics are combined with a form more remarkable for firmness than grace, a dark or sallow complexion, sparkling eyes, and great muscular force. "These men," says an ingenious writer (Am. Quarterly Rev. for March, 1829), "are urged by a constant restlessness to action; a habitual sentiment of disquietude allows them no peace but in the tumult of business; the hours of crowded life are the only ones they value; they are to be found wherever hardiness of resolution, prompt decision, and permanence of enterprise, are required." The phlegmatic, lymphatic or cold-blooded temperament is the reverse of that last described: with little propensity to action, and little sensibility; no great bodily strength or dexterity; rather a heavy look; the feelings calm; the understanding clear in a certain range, but never soaring into new regions, or penetrating deeply beneath the mysteries of the universe; and a disposition to repose or to moderate exertion,—the phlegmatic man is free from excesses, and his virtues and vices are stamped with mediocrity. The sanguineous temperament indicates a lively susceptibility, with little proneness to action; promptness, without perseverance; a ready fancy; little depth of feeling, or thought; changeable, but not violent feelings and passions; and a tendency to voluptuousness, levity, fickleness of purpose, and fondness of admiration. The sanguineous are distinguished for beauty and grace, and the whole organization is characterized by the vigor and facility of its functions: they are the witty, the elegant, the gay, the ornaments of society. The melancholic temperament is characterized by little susceptibility, but great energy of action, reserve, firmness of purpose, perseverance, deep reflection, constancy of feeling, and an inclination to gloominess, to ascetic practices, and to misanthropy. The athletic temperament possesses, in some degree, the qualities of the sanguineous; but it is distinguished by superior strength and size of body, indicating the excess of the muscular force over the sensitive. The athletic man has less playfulness of mind, less activity of spirit, little elevation of purpose or fixedness of character; he is good natured, but if excited, ferocious. The nervous temperament admits of the most various modifications; it is characterized by the predominance of the sensitive part of the system, and the powerful action of the nerves. The mind is active and volatile, though not from fickleness, but from the rapidity of its associations, the quickness of its resolutions, and the readiness of its combinations. The temperaments are rarely found unmixed, as we have described them; but one or the other is usually predominant. Each has its advantages and pleasures, attended with some corresponding drawback. (See Kant's *Anthropology*, or Schulze's *Anthropology*, both in German.)

Temperance Societies. The remarkable success of these institutions in counteracting a vice of great seductiveness, and of the most ruinous tendency, demands for their history and present condition a somewhat extended notice. The mental excitement produced by the reception of certain vegetable substances into the system is, in its first stage, so agreeable, that we cannot be surprised at finding some of them in use as far back, and as extensively, as our accounts of private manners reach. The fermented juice of fruits, as of the apple and grape, the intoxicating property of which latter is mentioned by Moses (Gen. ix, 21), probably was the most ancient, and is now the most common vehicle of the stimulating principle. The later Asiatics have found it in preparations from the poppy and the wild hemp, and the North American Indians in tobacco. The ancient Germans, according to Tacitus's account (*De Mor. Germ.*, xxiii), obtained an intoxicating drink from wheat and barley; but the art of brewing, as at present practised, appears not to have been known in England before the end of the fifteenth century. Distillation, which furnishes far the most powerful agents of this kind, was invented by the alchemists in the course of their experiments in search of the elixir of life. The first known distinct mention of it (*Encyclopédie Méthodique*, articles *Arts et Métiers*, *Distillateur*, *Liquoriste*, as quoted in Sullivan's Address, Boston, 1832) occurs in the thirteenth century. Arnaud de Villeneuve, a chemist and physician, who died about the year 1300, writes: "Who would believe that one can draw from wine, by chemical process, that which has not the color of wine, nor the ordinary effects of wine? This water of wine is called by some the *water of life* (*eau de vie*, brandy); and it well deserves the name, since it is truly a water of immortality. Already its virtues begin to be known. It prolongs one's life; it dissipates superfluous and vicious humors; it revives the heart, and perpetuates youth." Towards the end of the sixteenth century, the use of distilled spirits was introduced into England. Camden mentions them as having been adopted, in 1581, into the diet of the English soldiers in their campaigns in the Netherlands. A very heavy excise tax and duty on importations has not prevented the increase of their consumption in Great Britain till it has reached the amount of 40,000,000 of gallons annually. There is no evidence of their extensive use in North America during the first century after the settlement of the colonies. The exposures of the French war, and much more the hardships and disorders of the revolution, naturally tended to diffuse it. The men now upon the stage remember, from their childhood till within the last ten years, to have seen distilled spirits, in some form, a universal provision for the table at the principal repast, throughout this country. The richer sort drank French and Spanish brandy; the poorer, West India, and the poorest, New England rum. In the Southern States, whiskey was the favorite liquor; and the somewhat less common articles of foreign and domestic gin, apple brandy and peach brandy, made a variety which recommended itself to the variety of individual tastes. Commonly at meals, and at other times by laborers, particularly in the middle of the forenoon and afternoon, these substances were taken simply diluted with more or less water. On other occasions, they made a part of more or less artificial compounds, in which fruit of various kinds, eggs, spices, herbs and sugar were leading ingredients. A fashion at the south was to take a draught of whiskey flavored with mint soon after waking; and so conducive to health was this nostrum esteemed, that neither sex, and scarcely any age, was exempt from its application. At eleven o'clock, while mixtures, under various peculiar names,—sling, toddy, flip, &c.,—solicited the appetite at the bar of the common tippling shop, the office of professional men, and the counting room, dismissed their occupants for a half hour to regale themselves at a neighbor's, or a coffee-house, with punch, hot or iced, according to the season; and females and valetudinarians courted an appetite with medicated rum disguised under the chaste name of *Huxham's tincture*, or *Stoughton's elixir*. The dinner hour arrived, according to the different customs of different districts of the country, whiskey and water, curiously flavored with apples, or brandy and water, introduced the feast; whiskey, or brandy, with water, helped it through, and whiskey or brandy, without water, often secured its safe digestion, not again to be used in any more formal manner than for the relief of occasional thirst, or for the entertainment of a friend, until the last appeal should be made to them to secure a sound night's sleep. Rum seasoned with cherries protected against the cold; rum made astringent with peach-nuts concluded the repast at the confectioner's; rum made nutritious with milk prepared for the maternal office; and, under the Greek name of *paregoric*, rum doubly poisoned with opium quieted the infant's cries. No doubt there were numbers who did not use ardent spirits; but it was not because they were not perpetually in their way. They were an established article of diet, almost as much as bread, and, with very many, they were in much more frequent use. The friend who did not testify his welcome with them, and the master who did not provide bountifully of them for his servants, were held niggardly; and there was no social meeting, not even of the most formal or sacred kind, where it was considered indecorous, scarcely any where it was not thought necessary, to produce them. The consequence was, that what the great majority used without scruple, large numbers indulged in without restraint. Sots were common, of both sexes, various ages, and all conditions. And though no statistics of the vice were yet embodied, it was quite plain that it was constantly making large numbers bankrupt in property, character, and prospects, and inflicting upon the community a vast amount of physical and mental ill in their worst forms. The evil was too obvious and dreadful not to be the subject of much anxious observation; but endeavors to restrain it had hitherto taken no more effective shape than that of individual influence applied to individual cases. The idea of concentrating public sentiment upon it, in some form to produce more important results, seems to have been first developed, if not conceived, by some members of an ecclesiastical body, called the General Association of Massachusetts Proper. At a meeting of this association, in 1811, a committee, of which reverend doctor Worcester, of Salem, was chairman, was appointed to draught the constitution of a society whose object should be "To check the progress of intemperance, viewed by the association as an alarming and growing evil." Such a society was formed, consisting of about 120 members, in different parts of the state. It held its first meeting in 1813, and elected that eminent statesman, the late honorable Samuel Dexter, for its president. The first attempt of the society was naturally to collect facts towards a precise exhibition of the nature and magnitude of the existing evil, with the view of drawing public attention to it, and of directing endeavors for its removal. The reports presented, from year to year, embraced statements and calculations which were found to make out a case of the most appalling nature, such as to amaze even those whose solicitude on the subject had been greatest. In the year 1810, the federal returns showed 25,499,382 gallons of spirits of different kinds to have been distilled in the U. States, which quantity, to ascertain the consumption (no account, of course, being made of what may have escaped the knowledge of the custom-house and the marshals), was to be increased by 8,000,000 of gallons imported, and diminished by 133,823 exported. The amount thus ascertained, namely, 33,365,559 gallons, was distributed among a population of 7,239,903 (white and black), returned in the census of the same year. This gives an average of more than four gallons and a half for the year to every man, woman and child in the U. States. The society continued to collect and present, from year to year, statistical statements of this kind; and the curiosity and alarm excited by them led to similar observations in different quarters, the most considerable of which we shall presently mention. Some further particulars of the deplorable state of things, as successively brought to light, or made probable, we will here set down, premising that, so far from the earliest rough statements and calculations appearing, on further investigation, to have been exaggerated, it was rather found that the authors of these had shrunk with incredulity from the conclusions which their reasonings seemed to authorize, and the facts continually grew more alarming as they were more exactly ascertained. In 1814, it was suggested, in a circular of the Massachusetts society, that not less than 6000 citizens of the U. States might die annually victims of intemperance. In 1830, from much more full data, the number was estimated at above 37,000. Facts were thought to justify the inference, in this latter year, that 72,000,000 of gallons of distilled spirits were consumed in the country (not far from six gallons, on an average, or a half a gill a day to each individual), and that the number of confirmed drunkards (apart from those in some stage of progress towards the fixed habit) fell not much short of 400,000. From computations founded on facts collected in particular districts, there appeared reason to believe that intemperance was responsible for three quarters or four fifths of the crimes committed in the country, for at least three quarters of the pauperism existing, and for fully one third of the mental derangement. According to a calculation of less satisfactory character, but not destitute of probability, the annual waste for distilled spirits, reckoning the cost to the consumer (at two thirds of a dollar the gallon), the loss of the labor of drunkards and prisoners, and the direct cost of their crimes and pauperism, amounted to a sum which, vested in an annuity for twenty years, at six per cent., simple interest, would purchase all the lands, houses and slaves in the U. States. The Massachusetts society persevered to invite the public attention to the subject of intemperance in reports, and, with one or two exceptions, in addresses from distinguished individuals of its number at the annual meeting, continuing, till the year 1826, the most conspicuous agent in the enterprise of reformation, while, a year after its formation, a similar state institution, with numerous branches, was organized in Connecticut, measures of like character were set on foot in Vermont, and an indirect influence from itself was also exerted within its own proposed limits by auxiliary societies, which, according to the report of 1818, had multiplied at that time to the number of more than forty. At the same time, as was to be expected, individuals, by writing and by personal influence, were doing an important part in the same work. Early in the year 1826, a new impulse was given to the movement by the formation, in Boston, on a more extensive plan, of the American Society for the Promotion of Temperance. The Massachusetts society had now accomplished, perhaps, the most useful part of all to which it was competent. It had succeeded in fixing attention to its object in a part of the country where effective combination for further operations might be the most easily organized. By the facts which, with much labor, it had collected and promulgated, both in its own documents and in publications of the most material importance, which it had called out from private hands, it had both furnished guidance to further efforts of the same kind, and demonstrated their necessity; and, by the controlling influence of the names* which stood for vouchers of the wisdom of its design, it had abashed the derision, and shaken the incredulity with which its first annunciation had been met. The Massachusetts society had been in great part conducted by individuals belonging to a class of religionists, the Unitarians, whose influence, as such, was not great beyond a limited circle in New England, and who did not sufficiently command the sympathy of other denominations to be able to produce a combination of Christian action. At the time above mentioned, the enterprise was energetically taken up by other hands, in all respects highly competent to advance it, and, in that to which allusion has just been made, possessing altogether superior advantages. Perceiving the power which, in the use of means within their control, might be brought, under existing circumstances, to act upon the public mind, some judicious and philanthropic individuals, of the different denominations accustomed to exert a joint influence for general objects, held a meeting, at which they passed resolutions expressing their sense of the expediency of making, on the part of the Christian public, more systematic and vigorous efforts to suppress intemperance, and appointed a committee to devise means to that end. At an adjourned meeting, the constitution of a new society was adopted, and fifteen individuals elected to compose it, with such associates as might be thenceforward chosen by themselves. The first annual report announced the formation of 30, and the second of 220, auxiliary associations, five of which latter were state institutions. The number of auxiliary associations was increased, in 1829, to more than 1000, no state in the Union now being without one, and 11 of them bearing the names of their states respectively. The report of this year also announces it to have come to the knowledge of the society, that more than 700 habitual drunkards had been reformed by its influence, and that 50 distilleries had been closed. A decline in the sales of distilled spirits is represented to have generally taken place, varying, in different parts reported, from one quarter to nine tenths of the whole amount; and 400 dealers in them were known to have renounced the traffic for reasons of conscience. The time for the annual meeting having been altered, the next report was presented in the month of May, 1831. More than 2200 societies, embracing 170,000 members, were now in correspondence with the parent society, and, from less certain data, it was inferred that the whole number of societies existing was not less than 3000, and that of their members 300,000. More than 1000 distilleries had been stopped—a tenth part, as was believed, of all which had been in operation. Since the last meeting, 150 vessels had sailed from one port, that of Boston, without any provision of spirits. The number of members of the parent society now amounted to 200, dispersed through thirteen states. The report presented in May, 1832, has not been made public at the time of printing this notice. From extracts contained in the Journal of Humanity, a newspaper published under the society's direction since 1829, it appears that, from the sources of information accessible to its government, they gather that there are now 4000 auxiliary associations in the U. States, numbering 600,000 members; "that more than 4000 merchants have ceased to traffic in ardent spirits; and that more than 4000 drunkards have ceased to use intoxicating drinks. There is also reason to believe," the report proceeds, "that more than 20,000 persons are now sober, who, had it not been for the temperance reformation, would, before now, have been sots; and that 20,000 families are now in ease and comfort, without a drunkard in them, or one who is becoming a drunkard, who would otherwise have been in poverty, or cursed with a drunken inmate; and that 50,000 children are released from the blasting influence of drunken parents; and 100,000 more from that parental influence which tended to make them drunkards." "More than 1,000,000 of persons in the U. States," says another publication of the society of this year, "now abstain from the use of ardent spirits." The means by which the society has produced these results, apart from the contemporaneous labors, in writing, and by more personal endeavors, of a great number of individuals, connected and not connected with it, have been the calling of attention to the subject, and the diffusing of information upon it, by the circulation of tracts and the addresses of travelling agents, and then collecting such as have been influenced by the representations made, into auxiliary associations, embracing a larger or more limited neighborhood, thus making such individuals distinctly responsible for personal, and, as opportunity should permit, more public coöperation with its objects. Such associations have included females and children, it being thought of the highest importance thus to secure the influence of the former class, and the forming habits of the latter. The basis on which these associations have been formed, at least from an early period, has been that of an engagement, on the part of each member, to abstain from the use of distilled spirits, except for medicinal purposes, and to forbear to provide them for the entertainment of friends or the supply of dependants. The principle of the necessity of abstinence from the use of distilled spirits, in order to the prevention extensively of their fatal abuse—a principle to which the researches on the subject from the first had more and more directly tended, and which had, for instance, been distinctly argued in the address before the Massachusetts Society for the Suppression of Intemperance, at their meeting in the spring of 1826—was first, as far as appears, made the matter of an article of mutual agreement by an association formed at Andover in September of that year. At the second annual meeting of the American temperance society in 1829, a resolution was adopted, declaring it to be the duty of every professor of religion to exert his influence towards abolishing the use of ardent spirits; and the form of a constitution for auxiliary societies, appended to the report of that year, includes provision for a mutual pledge similar to that of the Andover association. The efforts of the society have of late been strenuously directed towards a change in the current opinions respecting the moral lawfulness of trafficking in them as an article of luxury or diet. At the annual meeting, in New York, in 1829, and again at Boston, in 1831, resolutions were passed, condemning the trade as inconsistent with the character of a Christian; and this argument is understood to be largely maintained in the last report, hitherto unpublished. In different places churches have also assumed this ground, and accordingly refuse to admit persons engaged in the trade to a participation in the ordinances of religion. The reformation, of which the example was thus set, found its way, in good time, to Europe. In the latter part of 1829 or 1830, the first temperance society in the old world was formed at New Ross, in Ireland, and, before the close of this latter year, there were societies in Ireland and Scotland, numbering more than 14,000 members. Applications were also made from Switzerland and Sweden for the society's publications, with a view to make them the basis of similar movements in those countries. In June, 1831, a general society was formed in London under the name of the British and Foreign Temperance Society. Details of the success of these undertakings have not yet been furnished. The following is a statement from the custom-house returns of the amount of ardent spirits imported into the U. States in the respective years named. There are now no returns to government of the amount manufactured.

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* Its presidents, during this period, were Samuel Dexter, formerly secretary of the treasury of the U. States; Nathan Dane, author of the ordinance of 1787, which saved the territory northwest of the Ohio from the curse of slavery; and Isaac Parker, chief-justice of the commonwealth.

In 1824, ...	5,285,047	gallons.
1825, ...	4,114,046	"

In 1826,	3,322,380	gallons.
1827,	3,465,302	"
1828,	4,445,692	"
1829,	2,462,308	"
1830,	1,095,400	"

Temperature; a definite degree of sensible heat, as measured by the thermometer. Thus we say a *high temperature*, and a *low temperature*, to denote a manifest intensity of heat or cold. According to Biot, *temperatures* are the different energies of caloric in different circumstances. Different parts of the earth's surface are exposed, as is well known, to different degrees of heat, depending upon the latitude and local circumstances. In Egypt it never freezes, and in some parts of Siberia it never thaws. In the former country, the average state of the thermometer is about 72°. The following table exhibits a general view of the variation of heat resulting from difference of latitude:—

Latitude.	Places.	M. Temp.
86°30′	Wadso, Lapland	36°
59 56	St. Petersburg	40
48 51	Paris	54
41 54	Rome	61
30 03	Cairo	73
20 00	Ocean	79
00 00	Ocean	81

The annual variation of heat is inconsiderable between the tropics, and becomes greater and greater as we approach the poles. This arises from the combination of two causes, namely, the greater or less directness of the sun's rays, and the duration of their action, or the length of time from sunrise to sunset. These two causes act together in the same place; that is, the rays of the sun are most direct always when the days are longest, or at the solstice. But while (the season being the same) the rays become more and more oblique, and consequently more feeble as we increase our latitude, the days become longer, and the latter very nearly makes up for the deficiency of the former, so that the greatest heat in all latitudes is nearly the same. On the other hand, the two causes of cold conspire. At the same time that the rays of the sun fall more obliquely, as we increase our latitude, the days become shorter and shorter at the cold season; and accordingly the different parallels are exposed to very unequal degrees of cold: while tropical regions exhibit a variation of only a few degrees, the highest habitable latitudes undergo a change amounting to 140°. Both heat and cold continue to increase long after the causes producing them have passed their maximum state. Thus the greatest cold is ordinarily about the last of January, and the greatest heat about the last of July. The sun is generally considered the only original source of heat. Its rays are sent to the earth just as the rays of a common fire are thrown upon a body placed before it; and, after being heated to a certain point, the quantity lost by radiation equals the quantity received, and the mean temperature remains the same, subject only to certain fluctuations depending upon the season and other temporary and local causes. According to this view of the subject, the heat that belongs to the interior of the earth has found its way there from the surface, and is derived from the same general source, the sun; and in support of this position is urged the well-known fact, that, below eighty or one hundred feet, the constant temperature, with only a few exceptions, is found to be the mean of that at the surface in all parts of the earth. But how are we to explain the remarkable cases in which the heat has been found to increase, instead of decreasing, as we descend? We are told that in the instance of mines, so often quoted to prove an independent central fire, the extraordinary heat, apparently increasing as we descend, may be satisfactorily accounted for in a simpler way:—1. It may be partly received from the persons employed in working the mines. 2. The lights that are required in these dark regions afford another source of heat. 3. But the chief cause is supposed to be the condensation of the air, which is well known to produce a high degree of heat. The condensation, moreover, becoming greater and greater according to the depth, the heat ought, on this account, to increase as we descend; and as a constant supply of fresh air from above is required to maintain the lights, as well as for the purposes of respiration, at the rate of about a gallon a minute for each common-sized light and for each workman, it is not surprising that the temperature of deep mines should be found to exceed that of the surface in the same latitude. This explanation of the phenomenon seems to derive confirmation from the circumstance that the high temperature observed is said to belong only to those mines that are actually worked, and that it ceases when they are abandoned.* If we except these cases, and that of volcanoes and hot springs, the temperature of the interior of the earth seems to be the mean of that at the surface; and hence it is inferred that it is derived from the same source. The diurnal variation of heat, so considerable at the surface, is not to be perceived at the depth of a few feet, although here there is a gradual change that becomes sensible at intervals of a month. At the depth of thirty or forty feet, the fluctuation is still less, and takes place more slowly. Yet at this distance from the surface there is a small annual variation; and the time of midsummer, or greatest heat, is ordinarily about the last of October, and that of midwinter, or greatest cold, is about the last of April. These times, however, are liable to vary a month or more, according as the power of the earth to conduct heat is increased by unusual moisture or diminished by dryness. But at the depth of eighty or a hundred feet, the most sensible thermometer will hardly exhibit any change throughout the year. So, on the other hand, if we ascend above the earth's surface, we approach more and more to a region of uniform temperature, but of a temperature much below the former. The tops of very high mountains are well known to be covered with perpetual snow, even in the tropical climates. The same, or rather a still greater degree of cold, is found to prevail at the same height, when we make the ascent by means of a balloon. The tops of high mountains are cold, therefore, because they are in a cold region, and constantly swept by currents of cold air. But what makes the air cold at this height? It is comparatively cold, partly because it is removed far from the surface of the earth, where the heat is developed, but principally because it is rarefied, and the heat it contains is diffused over a larger space. Take a portion of air near the surface of the earth, and at the temperature of 79° of Fahrenheit, for instance, and remove it to the height of about two and a half miles, and it will expand, on account of the diminished pressure, to double the bulk, and the temperature will be reduced about 50°. It will accordingly be below the freezing point of water. This height varies in different latitudes and at different seasons. It increases as we approach the equator, and diminishes as we go towards the poles. It is higher also, at any given place, in summer than in winter. It is, moreover, higher when the surface of the ground below is elevated like the table land of Mexico. At a mean the cold increases at the rate of about 1° for every 300 feet of elevation. In addition to the above, it ought to be mentioned that the tops of mountains part with the heat they receive from the sun more readily on account of the radiation taking place more freely in a rarer medium, and where there are few objects to send the rays back again. The question has been much discussed, whether the winters in the temperate latitudes have become milder or not. There is abundant evidence, it seems to us, in favor of the alleged change. Rivers which used to be frozen over so as to support armies, and which were expected to be covered in the winter season with a natural bridge of ice, as a common occurrence, now very rarely afford such facilities to travellers. The directions for making hay and stabling cattle, left us by the Roman writers on husbandry, are of little use in modern Italy, where, for the most part, there is no suspension of vegetation, and where the cattle graze in the fields all winter. The associations with the fireside, annually referred to as familiar to every one, can be little understood now in a country where there is ordinarily no provision for warming the houses, and no occasion for artificial heat as a means of comfort. The ancient custom of suspending warlike operations during the season of winter, even in the more southern parts of Europe, has been little known in campaigns of recent date; not because the soldier of our times is inured to greater hardships, but because there is little or no suffering from this cause. In the northern parts of our own country, also, the lapse of two centuries has produced a sensible melioration. When New England was first settled, the winter set in regularly at a particular time, continued about three months without interruption, and broke up regularly, in the manner it now does in some parts of Canada and Russia. The quantity of snow is evidently diminished, the cold season is more fluctuating, and the transition from autumn to winter, and from winter to spring, less sudden and complete. The period of sleighing is so much reduced and so precarious as to be of little importance compared with what it was. The Hudson is now open about a month later than it used to be. We are not, however, to conclude that so great a melioration has taken place as might at first be inferred from this fact. The change, whatever it be, seems to belong to the autumn and early part of winter. The spring, we are inclined to believe, is even more cold and backward than it used to be. The supposed mitigation of winter has usually been ascribed to the extirpation of forests, and the consequent exposure of the ground to the more direct and full influence of the solar rays; and there can be little doubt that a country does actually become warmer by being cleared and cultivated. The favorable change experienced in the New England and the Middle States may, it is thought, be referred to this circumstance. But the alteration that is observed in the similar latitudes of Europe can hardly be accounted for in this way. It is doubtful whether Italy is more clear of woods, or better cultivated, now than it was in the Augustan age. No part of the world, it is believed, has been cultivated longer or better than some parts of China; and yet that country is exposed to a degree of cold much greater than is experienced in the corresponding latitudes of Europe. The science of astronomy makes us acquainted with phenomena that have a bearing upon this subject. The figure of the earth's orbit round the sun is such that we are sometimes nearer to this great source of heat by 3,000,000 of miles, or one thirtieth of the whole distance, than at others. Now it so happens that we have been drawing nearer and nearer to the sun, every winter, for several thousand years. We now actually reach the point of nearest approach about the first of January, and depart farthest from the sun about the first of July. Whatever benefit, therefore, is derived from a diminution of the sun's distance, goes to diminish the severity of winter; and this cause has been operating for a long period, and with a power gradually but slowly increasing. It has, at length, arrived at its maximum, and is beginning to decline. In a little more than ten thousand years, this state of things will be reversed, and the earth will be at the greatest distance from the sun in the middle of winter, and at the least distance in the middle of summer. We are speaking, it will be observed, with reference to the northern hemisphere of the earth. The condition alluded to, to take place after the lapse of ten thousand years, is already fulfilled with regard to the southern portions of our globe, since their winter happens at the time of our summer. How far the excessive cold which is known to prevail about cape Horn and other high southern latitudes may be imputed to this, we are not able to say. There is no doubt that the ice has accumulated to a much greater degree and extended much farther about the south pole than about the north. Commodore Byron, who was on the coast of Patagonia Dec. 15, answering to the middle of June with us, compares the climate to that of the middle of winter in England. Sir Joseph Banks landed at Terra del Fuego, in lat. 50°, Jan. 17, about the middle of summer in that hemisphere; and he relates that two of his attendants died in one night from the cold, and the whole party was in great danger of perishing. This was in a lower latitude by nearly 2° than that of London. Captain Cook, in his voyage towards the south pole, expressed his surprise that an island of no greater extent than seventy leagues in circumference, between the latitudes of 54° and 55°, and situated like the northern parts of Ireland, should, in the very height of summer, be covered many fathoms deep with frozen snow. The study of the stars has made us acquainted with another fact connected with the variable temperature of winter. The oblique position of the earth's axis with respect to the path round the sun, or what is technically called the *obliquity of the ecliptic*, is the well known cause of the seasons. Now this very obliquity, which makes the difference as to temperature between summer and winter, has been growing less and less for the last 2000 years, and has actually diminished about one eightieth part, and must have been attended with a corresponding reduction of the extremes of heat and cold. It still remains for us to inquire how it happens that the extremes of heat and cold in the U. States are so much more intense than they are in Europe under the same parallels. The thermometer, in New England, falls to zero about as often as it falls to the freezing point in the same latitude on the other side of the Atlantic. The extreme heat of summer also is greater by 8° or 10°. This remarkable difference in the two countries, as to climate, evidently arises from their being situated on different sides of the ocean, taken in connexion with the prevalence of westerly winds. With us, a west wind is a land wind, and consequently a cold wind in winter and a warm wind in summer. The reverse happens on the opposite shore of the Atlantic. There, the same westerly current of air, coming from the water, is a mild wind in winter, and a cool, refreshing breeze in summer. The ocean is not subject to so great extremes of heat and cold as the same extent of continent. When the sun's rays fall upon the solid land, they penetrate to only a small depth, and the heat is much more accumulated at the surface. So, also, during our long, cold nights, this thin stratum of heated earth is more rapidly cooled down than the immense mass of the ocean through which the heat is diffused to a far greater depth. At a sufficient distance from land, the temperature of the sea, in the temperate latitudes, is seldom below 45° or above 70°; that is, the ocean is exposed to an annual change of only 25° or 30°, while the continent, in the same latitude, is subject to a variation of 100° or more. We are confirmed in the cause here assigned for the excessive severity of our climate, by finding that the parts of China, situated like the Atlantic states, have a similar climate; and that the western coast of this continent, without the benefit of much cultivation, enjoys the same mild temperature that belongs to places similarly situated in the western parts of Europe. The principal causes of the unfavorable character of our climate seem, therefore, to be of a permanent nature; and, although it is somewhat meliorated, and may, in time to come, be still more so, yet we are probably never destined to enjoy, in New England, the fine seasons and delicious fruits of the corresponding latitudes of Europe.—For more information on the natural history of the weather, see the *American Almanac* for 1832, from which this article is taken.

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* See Edinburgh Review, No. ciii, p. 50, &c.

TEMPESTA, or CAVALIER TEMPESTA, the surname of Peter Molyn (called also Petrus Mulier or de Mulieribus), a celebrated Dutch painter of marine pieces, was born at Harlem, in 1637, and acquired great celebrity at Rome. His delineations of storms at sea are forcible and true, and have been much more admired than his landscapes. Little is known of the circumstances of his life. He died in prison at Milan, in 1701, where he was confined on suspicion of having murdered his wife. He must not be confounded with *Antonio Tempesta*, a Florentine painter and engraver, born 1556, and died 1630, whose best productions are battle-pieces and hunts.

TEMPLARS; a celebrated order of knights, which, like the order of St. John and the Teutonic order, had its origin in the crusades. Hugh de Pajens, Godfrey de St. Uldemar, and seven other knights, established it in 1119, for the protection of the pilgrims on the roads in Palestine. Subsequently, its object became the defence of the Christian faith, and of the holy sepulchre against the Saracens The knights took the vows of chastity, of obedience, and of poverty, like regular canons, and lived at first on the charity of the Christian lords in Palestine. King Baldwin II of Jerusalem gave them an abode in this city, on the east of the site of the Jewish temple; hence they received the name of *Templars*. Pope Honorius II confirmed the order, in 1127, at the council of Troyes, and imposed on them rules drawn from those of the Benedictine monks, to which were added the precepts of St. Bernard de Clairvaux, who warmly recommended this order. The fame of their exploits procured them not only numerous members, but also rich donations in houses, lands and money. The different classes of this order were, knights, squires, and servitors, to which were added, in 1172, some spiritual members, who officiated as priests, chaplains, and clerks. All wore a badge of the order—a girdle of linen thread, to denote their vows of chastity; the clerical members had white, the servitors gray or black gowns; the knights wore, besides their armor, simple white cloaks, adorned with octangular blood-red crosses, to signify that they were to shed their blood in the service of the church. From the class of the knights, who were required to be of approved nobility, and who were the actual lords of the possessions of the order, the officers were chosen by the assembled chapters, viz. marshals and bannerets, as leaders in war; drapiers, as inspectors over their wardrobe; priors, as superiors of single preceptories or priories; abbots, commanders, and grand priors, as rulers over provinces (similar to the provincials of the monastic order); and the grand master, as chief of the whole order. The latter had the rank of a prince, and considered himself equal to the sovereigns of Europe; since the order, like the Jesuits in later times, by virtue of the papal charters, acknowledged the pope alone as its protector, being independent of any other ecclesiastical or secular jurisdiction, and free even from the effects of interdicts, governing itself, and administering its estates according to its own pleasure, the occupants and vassals of which had to pay them tithes. Uniting the privileges of a religious order with great military power, and always prepared for service by sea and land, it could use its possessions to more advantage than other corporations, and also make conquests on its own account; in addition to which it received rich donations and bequests from the superstition of the age. The principal part of the possessions of the order were in France: most of the knights were also French, and the grand master was usually of that nation. In 1244, the order possessed 9000 considerable bailiwicks, commanderies, priories and preceptories, independent of the jurisdiction of the sovereigns of the countries in which they were situated. Its members were devoted to the order with body and soul, and their entrance into it severed all their other ties. No one had any private property. The order supported all. The arrogance objected to them by bishops and princes is easily accounted for by their power and wealth, as is also the luxury in which they eventually indulged. The crusaders complained that the order allowed its worldly interests to prevent it from affording a cordial support to the holy wars; and the emperor Frederic II accused them of treason, of favoring the Saracens, and of friendly connexions with these enemies of Christianity. Though accounts differ on this point, it is certain that, during the gradual decline of the Christian kingdom of Jerusalem, the Templars endeavored to secure their own possessions in that country by means of treaties with the Saracens. Nevertheless, they were obliged, in 1291, with the last defenders of that kingdom, to leave the Holy Land entirely; and they transferred their chief seat, which had been in Jerusalem, to the island of Cyprus. There the grand master resided, with a select body of officers, knights and brethren, who exercised themselves in warfare by sea against the Saracens. James Bernard Molay, of Burgundy, the last successor of the first grand master, Hugh, endeavored in vain to reform the degenerate spirit of the order. Most of the knights cared more for their worldly possessions than for the holy sepulchre. The aspirations of many of them for political influence, particularly in France; the mystery which hung over the internal administration of the order, and which linked together the initiated; but especially its power and wealth,—drew upon it the suspicions and the jealousy of princes. Rumors were spread respecting ambitious plans for the overthrow of all the thrones of Europe, and for the establishment of a republic of the nobility; also respecting opinions at variance with the Catholic faith being fostered in the bosom of the order. In the quarrels between Philip the Fair and pope Boniface VIII, the order took part against the king. In consequence of this, Clement V, Philip's friend, under the pretext of consultations for a new crusade, and for a union of the knights Templars with the knights of St. John, summoned, in 1306, the grand master Molay, with sixty knights, to France. After their arrival, these and all the other knights present were suddenly arrested, Oct. 13, 1307, by the king's soldiers. Philip seized upon the estates of the order, removed his court into the temple (the residence of the grand master in Paris), and ordered the trial of the knights to be commenced without delay, by his confessor, William of Paris, inquisitor, and archbishop of Sens. He endeavored to justify this arbitrary procedure by the horrible crimes and heresies of which the order had been accused. Historical records represent the accusers as some expelled Templars, who calumniated the order at the instigation of its enemies. The charge of apostasy from the Catholic faith could not be substantiated. The other allegations, such as that they worshipped the devil, practised sorcery, adored an idol called *Baphomet*, contemned the sacrament, neglected confession, and practised unnatural vices, were, according to the general opinion of historians down to the present day, malicious misrepresentations or absurd calumnies. A gold box of relics, which the Templars used to kiss, according to the custom of Catholics, was what gave origin to the story of the Baphomet; and because, in an age previous to the general reception of the doctrine of transubstantiation, they practised the ancient manner of celebrating the mass (viz. without the elevation of the host), this was called contempt of the sacrament: their confessing exclusively to their own clerical members was the ground of the charge, that they received absolution from their temporal superiors; and the friendship by which they were united, gave rise to the imputation of unnatural practices. In those times of general persecution against heretics, every one, whose ruin was resolved upon, and who could not be attacked in any other way, was accused of heresy. Accordingly, Philip being determined, before any inquisition had taken place, to destroy the order, for whose wealth he thirsted, the inquisitors employed, who were entirely devoted to him, and, for the greater part, Dominicans, enemies of the order, used this means to excite the public opinion against them. By means of the most horrid tortures, confessions of crimes which had never been committed were extorted from the prisoners. Overcome by long captivity and torment, many Templars confessed whatever their inquisitors wished, since a persevering denial of the crimes with which they were charged was punished with death. Clement V at first opposed this arbitrary treatment of an order which was amenable only to the church; but Philip soon prevailed on him to join in its suppression. Two cardinals were sent to take part in the examinations at Paris, and other clergymen were united to the courts of inquisition in the provinces, in order to impart a more legal appearance to the procedure. Though little was, in fact, proved against the Templars, the archbishop of Sens dared, in 1310, to burn alive fifty-four knights, who had denied every crime of which they were accused. In other dioceses of France, these victims of tyranny and avarice were treated in a similar way. The other princes of Europe were also exhorted by the pope to persecute the Templars. Charles of Sicily and Provence imitated the example of Philip, and shared the booty with the pope. In England, Spain, Portugal, Italy, and Germany, the Templars were arrested, but almost universally acquitted. The inquisitions at Salamanca and at Mentz (1310) also resulted in the justification of the order. Nevertheless, the pope, at the council of Vienne, in Dauphiny, solemnly abolished the order by a bull of March 2, 1312, not in the legal way, but by papal authority (*per provisionis potius, quam condemnationis viam*). The members of the order, according to this bull, were to be punished with mildness, when they confessed the crimes imputed to them; but those who persevered in denying them were to be condemned to death. Among the latter were the grand master Molay, and Guido, the grand prior of Normandy, who were burnt alive at Paris, March 13, 1314, after they had cited, according to tradition, Philip and Clement to appear before the judgment-seat of God within a year. The pope, in fact, died April 19 in the same year, and the king November 29. The estates of the order were conferred, by the council of Vienne, upon the knights of St. John, and its treasures in money and precious stones were assigned for a new crusade. But in France, the greatest part fell to the crown, and the pope kept considerable sums for himself. In Spain and Portugal, some new military orders were founded, and endowed with the estates of the Templars. In other countries, the knights of St. John acquired the rich inheritance of their rivals. The Templars maintained themselves longest in Germany, where they were treated with justice and mildness. At Störlitz, some were found as late as 1319. The members who were discharged from their vows, entered the order of St. John. The original documents of the process against the Templars in France, published in 1792 by Moldenhawer, prove the infamous and arbitrary conduct of the French courts in this case. Von Hammer, in the *Fundgruben des Orients*, *Mysterium Baphometi revelatum*, has lately revived the accusation of apostasy, idolatry, and unnatural vices, against the knights Templars, representing them as Gnostics and Ophites; but Raynouard (*Journal des Savans*, March, 1819) has shown how unfounded is this accusation, and has proved that by Baphomet (q. v.) nothing but Mohammed is to be understood. Compare also Raynouard's *Monum. histor. relatifs à la Condemnation des Chevaliers du Temple* (Paris, 1813). Silvestre de Sacy has proved likewise (*Magaz. encyclop.*, 1806, volume vi.), that Baphomet signifies nothing but Mohammed. According to Wilh. Ferd. Wilcke's *Geschichte des Tempelherrnordens aus den Quellen*—History of the Order of the Templars, drawn from the Sources (Leipsic, 1826, seq., 2 vols.)—the spirit of the order had degenerated into a Mohammedan Gnosticism, which led to its ruin. Wilcke asserts the guilt of the order. It continued in Portugal under the name of the *order of Christ*. In Paris arose the society of the New Templars. Bishop Münter has published the statutes of the order from a manuscript in old French.

Temple (Latin, *templum*), in architecture; an edifice destined for the performance of public worship. Various etymologies have been suggested for the Latin word *templum*. Some derive it from the Greek τεμενος, the meaning of which was a sacred enclosure or temple (from τεμνω, I cut off, or separate), a temple being a place abstracted and set apart from other uses; others from the old Latin verb *templari* (to contemplate). The ancient augurs undoubtedly applied the name *templa* to those parts of the heavens which were marked out for observation of the flights of birds. Temples were, originally, all open; and hence, indeed, most likely, came their name. These structures are among the most ancient monuments. They were the first built, and the most noticeable of public edifices. As soon as a nation had acquired any degree of civilization, they consecrated particular spots to the worship of their deities. In the earliest instances, they contented themselves with erecting altars of earth or ashes in the open air, and sometimes resorted, for the purposes of worship, to the depths of solitary woods. At length they acquired the practice of building cells or chapels, within the enclosure of which they placed the images of their divinities, and assembled to offer up their supplications, thanksgivings and sacrifices. These were chiefly formed like their own dwellings. The Troglodites adored their gods in grottoes; the people who lived in cabins erected temples like cabins in shape. Clemens Alexandrinus and Eusebius refer the origin of temples to sepulchres; and this notion has been latterly illustrated and confirmed, from a variety of testimonies, by Mr. Farmer, in his Treatise on the Worship of Human Spirits, p. 373, &c. Herodotus and Strabo contend that the Egyptians were the first who erected temples to the gods; and the one first erected in Greece is attributed, by Apollonius, to Deucalion. (*Argonaut.* lib. iii.) The temple of Castor was built upon the tomb of that hero. At the time when the Greeks surpassed all other people in the arts introduced among them from Phœnicia, Syria and Egypt, they devoted much time, care and expense to the building of temples. No country has surpassed, or perhaps equalled them, in this respect: the Romans alone successfully rivalled them, and they took the Greek structures for models. In every city of Greece, as well as in its environs, and in the open country, was a considerable number of sacred temples. The ruins of this description, now existing, greatly exceed those of any other kind of building, owing to the fact that the best materials and the utmost attention were uniformly employed upon the Grecian and Roman temples. The particular divinity who was held to preside in chief over each several town, had always the most elegant and costly temple therein especially dedicated to him or her. The temples constructed in the provinces chiefly appertained to the gods of the country, or to those common to the several communities. In the immediate vicinity of these edifices, the people held, at fixed seasons, assemblies for the purpose of sacrificing to the gods; they also celebrated their festivals on the same spot, and deliberated respecting the affairs of the entire nation. The most ancient Grecian temples were not of great extent; some of them were very small. The *cella* was barely large enough to contain the statue of the presiding deity of the temple, and, occasionally, an altar in addition. Even in succeeding ages, this observation holds good in a great degree. Their object, in fact, did not render extent necessary; since the priests alone entered the *cella*, and the people assembled without the walls. Exceptions, indeed, were made, in the examples of those dedicated to the tutelary divinities of towns, of those of the supreme gods, and of those appropriated to the common use of various communities. This increased extent was chiefly displayed in the porticoes surrounding the *cella*. According to Vitruvius, the situations of the temples were regulated chiefly by the nature and characteristics of the various divinities. Thus the temples of Jupiter, Juno and Minerva, who were considered, by the inhabitants of many cities, as their protecting deities, were erected on spots sufficiently elevated to enable them to overlook the whole town, or, at least, the principal part of it. Minerva, the tutelary deity of Athens, had her seat on the Acropolis. (q. v.) The temples of Mercury were, ordinarily, in the forum. Those of Apollo and Bacchus were beside the theatres. The temple of Hercules was commonly near the gymnasium, the amphitheatre, or circus. Those of Mars, of Venus and of Vulcan were generally without the walls of the city, but near the gates. The temples of Esculapius were uniformly in the neighborhood of the towns, on some elevated and desirable spot, where the pure air might be inhaled by the invalids who came to invoke the aid of the god of health. In the cities, the houses of the inhabitants clustered round the temples. The form most generally given to temples was that of a long square; sometimes, however, they were circular. Those of the former shape commonly had a depth or length double their breadth, and their *cellæ* had ordinarily, at the exterior, porticoes which sometimes adorned only the façade of the anterior, sometimes that also of the posterior, and was occasionally carried round all four sides. Over the entablature of the columns, at both the fronts, was a pediment. The principal façades of the temples were always ornamented with an even number of columns, while the sides had generally an uneven number. The circular form was by no means common. Those temples were generally covered with a cupola, the height of which about equalled the semi-diameter of the entire edifice. The most celebrated instance of the circular temple is the pantheon of Rome. It has some peculiarities not common to its class. (See *Pantheon.*) Several of the very ancient Etruscan temples have an oblong shape, or one approaching to a perfect square. In several of the ancient buildings of this character were stair-cases, by means of which people mounted to the roof. These were constructed within the walls, by the side of the entrance fronting the *cella*, and, that they might occupy less space, were made winding. The Egyptian temples had a species of openings or windows. The statue of the divinity to whom the structure was dedicated was, as may be supposed, the most venerated object of the temple, and the most prominent ornament of the *cella*. It was, in almost every instance, executed by a distinguished artist, even when destined only for a small building. In the earliest instances, these statues were of *terra cotta*, and were commonly painted red; others were of wood. In succeeding times, as the fine arts advanced, iron and bronze were occasionally substituted, but still more frequently marble. (See *Sculpture*, and *Statue.*) The primitive bronze statues were not cast in one single jet, but in separate pieces, afterwards joined together. Besides the statue of the presiding deity, there were generally others, either in the *cella* or *pronaos*, or both, some of which had a special relation to the principal figure, whilst others served merely for ornament. The altar, on which the sacrifices were offered, was placed before the statue of the divinity, a little less elevated than it, and turned towards the east. (See *Altar.*) Sometimes single cells contained altars raised to sundry deities. To the sacred architecture of the Greeks, as exhibited in their various temples, we are indebted for the purest and best canons of architecture that the world has ever seen. The Egyptian temples were remarkable for the number and disposition of the columns, contained in several enclosures within the walls. The little *cella* appeared like a kind of stable, or lodging, for the sacred animal to whom, as it may be, the building was consecrated. This was never entered but by the priests. The porticoes were magnificent in size, proportions, and often in style. Obelisks and colossal statues were ordinarily placed before the entrance. These were sometimes preceded by alleys of sphinxes, or of lions, of immense size. Near the gates two masses of a pyramidal form were erected: these were often covered with hieroglyphic *bassi-rilievi*. A corbel, scooped out in the shape of a gorge, was the only substitute for the entablature, whether to the gate itself, or to the two lofty masses adjoining. No pediment or shape of roof interfered with the horizontal line of the platform above, with which the temples were covered, and on which it is probable that the priests passed the nights in making astronomical observations. (See *Architecture*, vol. i, p. 339; also *Denderah*, *Hieroglyphics*, *Elephantine*, and *Thebes.*) The Indian temples, or pagodas, are sometimes of immense size. (See *Pagoda*, *Elora*, and *Salsette*; also the article *Architecture.* For Christian temples and churches, see *Architecture*, *Cathedral*, and *Masonry.*) The first Hebrew temple was built by Solomon on mount Moriah, in Jerusalem, with the help of a Phœnician architect. It was an oblong stone building, sixty cubits in length, twenty in width, and thirty in height. On three sides were corridors, rising above each other to the height of three stories, and containing rooms, in which were preserved the holy utensils and treasures. The fourth or front side was open, and was ornamented with a portico, ten cubits in width, supported by two brazen pillars, Jachin and Boaz (stability and strength). The interior was divided into the most holy place, or oracle, twenty cubits long, which contained the ark of the covenant, and was separated, by a curtain or veil, from the sanctuary, or holy place, in which were the golden candlesticks, the table of the showbread, and the altar of incense. The walls of both apartments, and the roof and ceiling of the most holy place, were overlaid with wood work, skilfully carved. None but the high priest was permitted to enter the latter, and only the priests, devoted to the temple service, the former. The temple was surrounded by an inner court, which contained the altar of burnt-offering, the brazen sea and lavers, and such instruments and utensils as were used in the sacrifices, which, as well as the prayers, were offered here. Colonnades, with brazen gates, separated this court of the priests from the outer court, which was likewise surrounded by a wall. See Hirt's *Tempel Solomonis* (Berlin, 1809). This temple was destroyed by the Assyrians, and, after the return from the

Babylonish captivity (see *Hebrews*), a second temple, of the same form, but much inferior in splendor, was erected. Herod the Great rebuilt it of a larger size, surrounding it with four courts, rising above each other like terraces. The lower court was 500 cubits square, on three sides surrounded by a double, and on the fourth by a triple row of columns, and was called the *court of the Gentiles*, because individuals of all nations were admitted into it indiscriminately. A high wall separated the court of the women, 135 cubits square, in which the Jewish females assembled to perform their devotions, from the court of the Gentiles. From the court of the women fifteen steps led to the court of the temple, which was enclosed by a colonnade, and divided by trellis-work into the court of the Jewish men and the court of the priests. In the middle of this enclosure stood the temple of white marble, richly gilt, 100 cubits long and wide, and 60 cubits high, with a porch 100 cubits wide, and three galleries, like the first temple, which it resembled in the interior, except that the most holy was empty, and the height of Herod's temple was double the height of Solomon's. Rooms, appropriated for different purposes, filled the upper story above the roof of the inner temple. The fame of this magnificent temple, which was destroyed by the Romans, and its religious significance with Jews and Christians, still render it more interesting to us than any other building of antiquity. To the Jew, it is even now a subject of sorrow and regret; to the architect, a key to the history of the old Oriental architecture; to the free-mason, the most important symbol of his ritual.

Temple, sir William, an eminent statesman, the son of sir John Temple, was born in London, in 1628. At the age of seventeen, he was entered of Emanuel college, Cambridge, under the tuition of Cudworth, and, in his twenty-fifth year, commenced his travels, and passed six years in France, Holland, Flanders, and Germany. He returned in 1654, and, not choosing to accept any office under Cromwell, occupied himself in the study of history and philosophy. On the restoration, he was chosen a member of the Irish convention, when he acted with great independence; and, in 1661, he was returned representative for the county of Carlow. The following year, he was nominated one of the commissioners from the Irish parliament to the king, and removed to London. Declining all employment out of the line of diplomacy, he was disregarded until the breaking out of the Dutch war, when he was employed in a secret mission to the bishop of Munster. This he executed so much to the satisfaction of the ministers, that, in the following year, he was appointed resident at Brussels, and received the patent of a baronetcy. In conjunction with De Witt, he concluded the treaty between England, Holland, and Sweden (February, 1668), with a view to oblige France to restore her conquests in the Netherlands. He also attended, as ambassador extraordinary, and mediator, when peace was concluded between France and Spain, at Aix-la-Chapelle, and, subsequently residing at the Hague as ambassador, cultivated a close intimacy with De Witt, and became familiar with the prince of Orange, afterwards William III, then only in his eighteenth year. A change of politics at home led to the recall of Temple, in 1669, who, refusing to assist in the intended breach with Holland, retired from public business to Sheen, and employed himself in writing his Observations on the United Provinces, and part of his Miscellanies. In 1674, sir William Temple was again ambassador to the states-general, in order to negotiate a general pacification. Previously to its termination in the treaty of Nimeguen (in 1678), he was instrumental in promoting the marriage of the prince of Orange with Mary, eldest daughter of the duke of York, which took place in 1677. In 1679, he was recalled from the Hague, and offered the post of secretary of state, which he declined. As a statesman, he was opposed to the exclusion of the duke of York. Disgusted by Charles's dissolution of the parliament in 1681, without the advice of his council, he declined the offer of being again returned for the university, and retired from public life altogether. In the reign of James II, he estranged himself entirely from politics; but when the revolution was concluded, he waited on the new monarch, to introduce his son, and was again requested to accept the office of secretary of state, which he once more declined. His son was afterwards appointed secretary at war, but, in a fit of melancholy, threw himself into the Thames, which only extorted from his father a maxim of the Stoic philosophy, that "a wise man might dispose of himself, and render life as short as he pleased." About this time, sir William took Swift (q. v.) to live with him: he was likewise occasionally visited by king William. He died at Moor park, Surrey, in January, 1700, in his seventy-second year. Sir William Temple merits a high rank both as a statesman and a patriot. His Memoirs are important as regards the history of the times, as are likewise his Letters, published by Swift, after his death. All his works, which have been published collectively (in 2 vols., 4to., and 4 vols., 8vo., 1814), display a great acquaintance both with men and books, conveyed in a style negligent and incorrect, but agreeable, and much resembling that of easy and polite conversation.

Temple, Lord. (See *Junius.*)

Temple. (See *Inns of Court.*)

Temple-Bar, between Fleet street and the Strand, London. This handsome gate is the only one of the city boundaries now remaining. It was built after the great fire, by sir C. Wren, and is composed of Portland stone, of rustic work below, and of the Corinthian order. Over the gateway, on the east side, are statues of queen Elizabeth and James I; and on the west side, of Charles I and II. The heads of persons executed for high treason were formerly exhibited on this gate. Here, also, on particular occasions, the corporation of London receives the royal family, the herald's proclamations, or any distinguished visitors. When the king comes in state, the lord mayor here delivers to him the sword of state, which is returned, and then rides, bareheaded, immediately before him.

Temple, Palace of the (*palais du temple*); an edifice in Paris, built in 1222, for a residence of the Templars, whence its name. On the suppression of the order (in 1312), it was given to the knights of Malta; and, after the destruction of the Bastile, the tower was converted into a prison of state. (See *Templars.*) Louis XVI (q. v.) was confined here, with his family, previous to his execution. The palace of the grand prior is now converted into a Benedictine convent, instituted by the princess of Bourbon-Condé, in 1816.

Tempo (Italian for *time*) signifies, in music, the degree of quickness with which a musical piece is to be executed. This depends, of course, chiefly upon the character of the piece. Generally speaking, there are five principal degrees, designated by the following terms: *largo*, *adagio*, *andante*, *allegro* and *presto;* and the intermediate degrees are described by additions. But it may be better to divide the *tempo* into three chief movements—slow, moderate, and quick—which again have several gradations, designated by the following Italian words: 1. in the slow movements—*largo*, *lento*, *grave*, *adagio*, *larghetto;* 2. in the moderate movement—*andante*, *andantino*, *moderato*, *tempo giusto*, *allegretto*, &c.; 3. in the quick movement—*allegro* (sometimes, also, *allabreve*), *vivace*, *presto*, *prestissimo*. If the degrees thus designated are to be modified still more, the following words are added to increase the rapidity—*assai*, *molto*, or *di molto più;* and to lessen it, the words *poco*, or *un poco*, *non tanto*, *non troppo meno*, &c.; for instance, *largo*, or *adagio assai*, or *di molto*, signifies very slow, as slow as possible; *allegro*, or *vivace assai*, or *molto*, is quicker than the mere *allegro* or *vivace; presto assai*, very quick; further, *adagio non troppo*, or *poco adagio*, is somewhat slower; *un poco allegro*, somewhat less quick; *vivace non tanto*, not too lively, &c. Often, the predominating time is interrupted, in some passages slackening (*rallentando*, *ritardando*), or quickening (*accelerando*, *stringendo*, *più stretto*), or it is left to the performer's pleasure (*a piacere*), in which case, those who accompany often have to guide themselves by the leading performer, which is called *colla parte*. If a more distinct time or the former time is to be resumed, the phrase *a tempo*, or *tempo primo*, is used. Several machines have been invented, by which the time of a piece or a passage can be accurately determined. (See *Time.*) The best measures of time, however, are taste, correct feeling, experience and judgment.

Tempo Rubato (Italian, *robbed time*), delayed time, signifies a species of expressive performance, particularly of slow pieces, in which something is taken from the duration of some notes of the principal voice, and the time, therefore, is not strictly observed; but in the general performance, and in the lower voices, the time is accurately observed. The *tempo rubato* accelerates some passages and retards others; but the unity of the whole does not suffer. The *tempo rubato* requires much practice and fine taste, and should not occur too frequently.

Ten Jurisdictions, League of the. (See *Grisons.*)

Tenaille. (See *Outworks.*)

Tenarus; a town of the Peloponnesus, on the promontory of Tænarum (see *Matapan*), near which was a cavern which was considered as the entrance to the habitation of Pluto. Through this cavern Hercules dragged up Cerberus from the infernal regions, and Orpheus led his wife Eurydice back to earth.

This fable gave rise to the practice of evoking spirits from the world of shades, and of restoring spectres to their resting places, by the performance of certain mystic ceremonies at the mouth of the cave. Hence the infernal regions are sometimes called *Tenarus*. There was a temple of Neptune on the promontory, which had the character of an asylum. The green marble of Tenarus (*verd antique*; see *Marble*) was much prized by the ancients; and the purple snail, which yielded the Lacedæmonian purple, the best produced in Europe, was found here.

Tench (*cyprinus tinca*); a European fresh water fish, belonging to the carp family. It is distinguished by the diminutive size of the scales. The body is short and thick, the head large, and the lips thick; the length is generally less than a foot, but individuals are sometimes taken weighing five or six pounds. It is fond of still and muddy waters, and is taken both with net and line. The flesh is white, soft, insipid, and difficult of digestion.

Tendon. (See *Muscle.*)

Tenedos; a small island near the coast of Asia, not far from the Dardanelles; lon. 26° E.; lat. 39° 53′ N.; population, 7000, about two thirds Turks, and one third Greeks; square miles, 35. The Greeks, when they feigned to abandon the siege of Troy, lay concealed behind this island. Tenedos is rocky, but fertile, and produces the finest wine in the Archipelago. Its position near the mouth of the Hellespont has always made it important. Vessels bound to Constantinople find shelter in its ports, or safe anchorage in the road, during contrary winds, and in foul weather. The principal town is of the same name, and has a population of about 5000, with a harbor and citadel. The harbor has been enclosed in a mole, of which no part now appears above water; but loose stones are piled on the foundations to break the waves.

Teneriffe; one of the Canary islands. (q. v.) The chief town is Santa Cruz. As a natural object, it is chiefly remarkable for its summit, called the *Peak of Teneriffe*, of the sloping sides of which the island consists. Its commercial importance depends chiefly on its wine, of which from 10,000 to 15,000 pipes are annually exported: though inferior to Madeira, yet it is in considerable demand. Teneriffe also exports orchilla weed, rose wood, &c. The climate, on the coast, is hot; but at the elevation of 2000 feet, it is cool and agreeable. The cultivated parts are fertile, and produce orange, myrtle, cypress, date, and chestnut trees, vines, wheat, cocoa, coffee, sugar-cane, &c. The elevation of the Peak is about 12,250 feet. In ascending it, the first eminence is called *Monte Verde*: beyond this is the *Mountain of Pines*; after passing which, the traveller reaches a plain called, by the natives, *Mondon de Trigo*, on which the Peak stands. It is a mountainous platform, rising more than 7000 feet above the level of the plain. The Piton or sugar-loaf summit is very steep, and can be ascended only on the east and south-east sides. At the elevation of 9786 feet is a platform of pumice stones, bordered by two currents of lava: beyond it the acclivity is very steep, the currents of lava being covered with masses of scoriæ. Towards the summit, nothing but pumice stone is to be seen. The crater is of an elliptical form, about 1200 feet in circuit, but has long since ceased to emit flames; and the summit may be considered as an extinguished volcano. From the sides of the mountain, several violent eruptions have taken place within the present century. The view from the top of the Peak is peculiarly beautiful. With the steep and naked declivities of the mountain is contrasted the smiling aspect of the country beneath, with the towns and villages, the sails of vessels in the harbors, and beyond a vast extent of ocean, studded with the archipelago of the Canary islands.

Teniers, David; the name of two of the most celebrated artists of the Flemish school of painting, father and son, both natives of Antwerp, in which city the elder was born in 1582. Having studied under Rubens, he went to Rome, and remained there six years. On his return to his native country, he occupied himself principally in the delineation of fairs, shops, rustic sports and drinking parties, which he exhibited with such truth, humor and originality, that he may be considered the founder of a style of painting, which his son afterwards brought to perfection. His pictures are mostly small. The elder Teniers died in 1649.—His son, born in 1610, imitated the style and expression of his father, whom he much excelled in correctness and finish. He confined himself principally to the same subjects of low humor in his original pieces. The wonderful exactness with which he copied the productions of others deceived even the best judges of the age, and acquired him the appellation of the *ape of painting*. Leopold, archduke of

Austria, made him one of the gentlemen of his bed-chamber. He died in 1694.—Another son, named Abraham, was also a good painter.

Tennessee, one of the United States of America, is bounded on the north by Kentucky and Virginia; on the east by North Carolina; on the south by Georgia, Alabama and Mississippi; and on the west by Mississippi river; lat. 35° to 36° 36′ N.; lon. 81° 26′ to 90° 16′ W. It was originally included in North Carolina, from which it was separated, and admitted into the Union in 1796. Population in 1830, 684,822 (142,382 slaves); square miles, 40,000. The state is divided into two distinct sections by the Cumberland mountains, called *East Tennessee* and *West Tennessee*. Mountains and hills occupy a great proportion of the state. In East Tennessee, the Alleghanies branch out into the Laurel and Cumberland ridges, and many of their peaks are high. The valleys and the alluvions of the large and numerous rivers are very rich, and even the summits of some of the mountains have extensive *plateaux*, which are traversed by roads, are inhabited, and made to yield in abundance the productions of the Northern States. "There can be nothing," says Mr. Flint, "of grand and imposing in scenery, nothing striking and picturesque in cascades and precipitous sides of mountains covered with woods, nothing romantic and delightful in deep and sheltered valleys, through which wind still and clear streams, which is not found in this state." There is more land in Tennessee that is unfit for cultivation than in some of the neighboring states; but as great a proportion of what is cultivated is of the first quality. In East Tennessee, the soil contains an uncommon quantity of dissolved lime and nitrate of lime, which renders it very fertile. The descending strata, in West Tennessee, are arranged in the following order:—first, loamy soil, or a mixture of clay and sand; second, yellow clay; third, a mixture of red sand and red clay; fourth, white sand. White, red and gray marble, inexhaustible quarries of gypsum, burr millstones, rock crystals, lead, iron ore in abundance, are the minerals and fossils that are known. Salt springs are common, and nitrous earth is found in caves, sufficient to supply the whole country. These caves themselves are among the most remarkable curiosities in America. One of them was descended, not long since, 400 feet below the surface, and on the smooth limestone at the bottom was found a stream of pure water, sufficient to turn a mill. A cave on the Cumberland mountain has a perpendicular descent, the bottom of which has not yet been sounded. Some of these caves have been explored for ten or twelve miles. They have vaulted roofs of limestone, are frequently divided into spacious apartments, and abound with nitrous earth. They are so common that little attention is paid to them. Caves, in comparison with which the one so celebrated at Antiparos is but a slight excavation, are too common, in Tennessee, to be noticed. The climate of this state is generally delightful. In West Tennessee, great quantities of cotton are produced. In East Tennessee, the climate is well adapted to grazing, and produces all kinds of grain and fruit which grow in the more northern states. The outlets of commerce are the noble rivers Cumberland and Tennessee; and along these the boats carry cotton, indigo, corn, whiskey, hogs, horses, cattle, flour, gunpowder, saltpetre, poultry, bacon, lard, butter, apples, pork, coarse linen, tobacco, and many other articles, which are principally designed for the market of New Orleans. The southern parts of the state, adjoining Alabama, will doubtless be connected by canals with the rivers of Alabama, and thus save a great extent of transportation. The principal rivers, the Cumberland and Tennessee, are described in separate articles. There are numerous others, which flow into these or into the Mississippi. Nashville and Knoxville are separately noticed. There are numerous villages which contain from 600 to 1800 inhabitants. A good description of the curiosities of Tennessee would make a very interesting and useful volume. "On some spurs of the Cumberland mountains," says Mr. Flint, "are marked, in solid limestone, the footsteps of men, horses and other animals, as fresh as if recently made, and as distinct as if impressed upon clay mortar." Similar tracks were found in a block of solid limestone, quarried on the margin of the Mississippi. Near the southern boundary of the state are three trees entirely petrified. One is a cypress, four feet in diameter; one a sycamore; and the third a hickory. Prodigious claws, teeth and bones of animals are found near the salines. Some of these bones are perfect and indicate an animal twenty feet high. A nest of eggs of the wild turkey have been dug up in a state of petrifaction. Walls of faced stone, and even walled wells, have been found in many places, which are undoubtedly the work of a remote generation. In this state, as well as in Missouri, are ancient burying grounds, where the skeletons seem all to have been pigmies. Even the graves in which the bodies are deposited are seldom more than two, or two and a half feet long; and the teeth show that these are skeletons of adults. Jugs, vases, idols of clay, logs and coal, are dug from great depths. Beautiful cascades, falling from 200 to 400 feet, are seen in many places. On some high and apparently inaccessible rocks are numerous paintings, the work of remote ages. They consist of figures of the sun, moon, and various animals. Some of the delineations are good, and the colors are as fresh as if recently applied. The navigable streams pass, for many miles, through chasms of limestone, with perpendicular sides 300 or 400 feet high. There are three institutions in Tennessee that are called colleges—at Nashville, Marysville and Knoxville. Only the first is flourishing, and of great importance to the state. Academies and common schools are increasing, but education is not yet in an advanced state. The first permanent settlements of whites were made in East Tennessee, in 1768 and 1769. The settlers came from Virginia and North Carolina. Most of the territory was then occupied by Cherokees, Choctaws, Chickasaws and Shawnees; and for many years the settlers were greatly annoyed by them. The first permanent settlements in West Tennessee were made in 1779. Here also the Indians made a formidable resistance to the encroachments of the whites, and continued to annoy them for many years. Very few, except of the Chickasaws, remain in Tennessee; and their numbers have so diminished that they have ceased to be formidable. The people of Tennessee are a hardy, intelligent and enterprising race, considering the unsettled state in which their civil interests were kept until the last fifteen years. Though a few scattering settlements preceded that period, the building of fort Loudon, in East Tennessee (1757), commenced the real colonization of the country—a colonization made in blood. A war with the Cherokees broke out in 1759, and, in the ensuing year, fort Loudon was taken, and the garrison and inhabitants massacred. In 1761, colonel Grant forced the Indians to a peace, and settlers gradually entered Upper Tennessee. No real peace could be maintained with the savages; nor were the frontiers of Tennessee really safe until the close of the revolutionary war. West Tennessee began to be settled about the same period with East Tennessee; and the same causes of suffering and retardation operated on both settlements. The battle of King's mountain, Oct. 7, 1780, gained, in great part, by the hardy riflemen of Tennessee and Kentucky, was the expiring struggle of the British, and gave them security against the savages. Intestine violence, however, distracted the country for several years. Between 1784 and 1789, attempts were made to form East Tennessee into a separate state by the name of Frankland. In 1790, North Carolina ceded the whole of what is now Tennessee to the U. States; and the same year, in May, it was made the territory south-west of the Ohio. The territorial government continued until June, 1795, when, the inhabitants of both Tennessees being found to amount to 77,262, a convention was called, which met at Knoxville, Jan. 11, 1796, and, on Feb. 9, reported a constitution for the new state, which, on June 1 of the same year, was formally received into the confederacy as an independent member.

Tennessee River rises in the Alleghany mountains, traverses East Tennessee, crosses nearly the whole northern part of Alabama, then turns to the northward, and crosses Tennessee and Kentucky, and unites with the Ohio, thirteen miles below the mouth of the Cumberland, and fifty-seven above the mouth of the Ohio. Its length by its meanders is about 1200 miles, which is considerably greater than that of the Ohio from Pittsburg to the Mississippi, and about as great as that of the Ohio including either of its head branches. Many suppose that the Tennessee contributes as much water as the Ohio. The Tennessee is susceptible of navigation for at least 1000 miles, and has no considerable obstructions. Its head branches are Holston, Nolachucky, French Broad, Tellico, Richland and Clinch. In its whole course, it is continually receiving rivers that have courses in the mountains. The principal of these are Powell's, Sequalchee, Elk and Duck. The country through which it flows is remarkable for its fertility, and a great part of it is healthy.

Tennis; a pastime, or game at ball, which seems to have been introduced into England in the beginning of the thirteenth century, by persons of rank, who erected courts, or oblong edifices, for the performance of it. The origin of the name is uncertain.—The celebrated *oath of the tennis court* (*jeu de paume*) was taken by the members of the national assembly in a tennis court at Versailles, May 20, 1789 (when the doors of the hall had been shut against them by the royal command), binding themselves never to separate until they had given a constitution to France.

TENOCHTITLAN. (See *Mexico*, vol. viii, p. 454.)

TENOR (in Italian, *tenore*) is one of the four chief descriptions of the human voice. It is the more delicate of the two voices which belong to the riper age of the male singer, and its compass generally extends from d, in the small octave, to the single-marked f or g. For a solo tenor, a greater depth and height is requisite (from c, in the small octave, to a and b, in the descant octave); and the voice, at this height, is generally in *falsetto*. (q. v.) The qualities of the tenor render it suitable to the expression of tender and delicate sentiments. In the common song of four voices, the tenor forms the second middle voice, as it is deeper than the *alto*, but its compass must, notwithstanding, extend above the melody of the base; but in the song of four male voices, the tenor, as the first voice, leads the chief melody, and, as the second, the higher middle voice. The clef (q. v.) of this voice is the C clef. The tenor is more rare in Germany than the base, on which account it is particularly valued. The French call it *taille*, and esteem it particularly.

TENTER; a railing used in the cloth manufacture, to stretch out the pieces of cloth, stuff, &c., or only to make them even, and set them square. It is usually about four feet and a half high, and in length exceeds the longest piece of cloth. It consists of several long pieces of wood, placed so that the lower cross piece may be raised or lowered, as is found requisite, to be fixed at any height by means of pins. Along the cross pieces, both the upper and under one, are hooked nails, called *tenter-hooks*, from space to space. In England, it is made felony, without benefit of clergy, to steal cloth on the tenters in the night time, by 22 Car. II, c. 5; and having in possession any cloth stolen from the tenters, and not giving a good account of the manner of becoming possessed, is subjected to transportation by 15 Geo. II, c. 27.

TENTYRA, or TENTYRIS. (See *Denderah*.)

TENURES. As the system of tenures, under the feudal system, is of much interest, we shall give a considerable part of Blackstone's chapter on the ancient English tenures. Almost all the real property of England is, by the laws, supposed to be granted by, dependent upon, and holden of, some superior lord, by and in consideration of certain services to be rendered to the lord, by the tenant or possessor of this property. The thing holden is therefore styled a *tenement*, the possessors thereof *tenants*, and the manner of their possession a *tenure*. Thus all the land in the kingdom is supposed to be holden, mediately or immediately, of the king, who is styled the *lord paramount*, or above all. Such tenants as held under the king immediately, when they granted out portions of their lands to inferior persons, became also lords with respect to those inferior persons, as they were still tenants with respect to the king, and, thus partaking of a middle nature, were called *mesne*, or *middle, lords*. In this manner are all the lands of the kingdom holden, which are in the hands of subjects. All tenures being thus derived, or supposed to be derived, from the king, those that held immediately under him, in right of his crown and dignity, were called his tenants *in capite*, or in chief. There seem to have subsisted four principal species of lay tenures, to which all others may be reduced; the grand criteria of which were the natures of the several services or renders, that were due to the lords from their tenants. The services, in respect of their quality, were either free or base services; in respect of their quantity, and the time of exacting them, were either certain or uncertain. Free services were such as were not unbecoming the character of a soldier or a freeman to perform; as to serve under his lord in the wars, to pay a sum of money, and the like. Base services were such as were fit only for peasants, or persons of a servile rank; as to plough the lord's land, to make his hedges, to carry out his dung, or other mean employments. The certain services, whether free or base, were such as were stinted in quantity, and could not be exceeded on any pretence; as to pay a stated annual rent, or to plough such a field for three days. The uncertain depended upon unknown contingencies; as to do military service in person, or pay an assessment in lieu of it, when called upon, or to wind a horn whenever the Scots invaded the realm, which are free services; or to do whatever the lord should command, which is a base or villein service. From the various combinations of these services have arisen the four kinds of lay tenure, which subsisted in England till the middle of the last century, and three of which subsist to this day. Where the service was free, but uncertain, as military service with homage, that tenure was called the *tenure in chivalry*, *per servitium militare*, or by knight-service. Secondly, where the service was not only free, but also certain, as by fealty only, by rent and fealty, &c., that tenure was called *liberum socagium*, or free socage. These were the only free holdings or tenements; the others were villenous or servile: as, thirdly, where the service was base in its nature, and uncertain as to time and quantity, the tenure was *purum villenagium* (absolute or pure villenage). Lastly, where the service was base in its nature, but reduced to a certainty, this was still villenage, but distinguished from the other by the name of *privileged villenage* (*villenagium privilegiatum*); or it might be still called *socage*, from the certainty of its services, but degraded by their baseness into the inferior title of *villanum socagium* (villein-socage). The first, most universal, and esteemed the most honorable species of tenure, was that by knight-service. To make a tenure by knight-service, a determinate quantity of land was necessary, which was called a *knight's fee* (*feodum militare*); the measure of which, in 3 Edw. I, was estimated at twelve ploughlands; and its value, though it varied with the times, in the reigns of Edward I and Edward II, was stated at twenty pounds per annum. And he who held this proportion of land, or a whole fee, by knight-service, was bound to attend his lord to the wars for forty days in every year, if called upon. If he held only half a knight's fee, he was only bound to attend twenty days; and so in proportion. And there is reason to apprehend, that this service was the whole that the landholders meant to subject themselves to; the other fruits and consequences of this tenure being fraudulently superinduced, as the regular, though unforeseen, appendages of the feudal system. These fruits and consequences were aids, relief, primer seisin, wardship, marriage, fines for alienation, and escheat. 1. Aids were originally mere benevolences granted by the tenant to his lord, in times of difficulty and distress; but in process of time they grew to be considered as a matter of right, and not of discretion. These aids were principally three:—first, to ransom the lord's person, if taken prisoner—a necessary consequence of the feudal attachment and fidelity; insomuch that the neglect of doing it, whenever it was in the vassal's power, was, by the strict rigor of the feudal law, an absolute forfeiture of his estate. Secondly, to make the lord's eldest son a knight—a matter that was formerly attended with great ceremony, pomp and expense. This aid could not be demanded till the heir was fifteen years old, or capable of bearing arms; the intention of it being to breed up the eldest son and heir apparent of the seigniory to deeds of arms and chivalry, for the better defence of the nation. Thirdly, to marry the lord's eldest daughter, by giving her a suitable portion. In this particular, the lord and vassal of the feudal law bore a great resemblance to the patron and client of the Roman republic, between whom, also, there subsisted a mutual fealty, or engagement of defence and protection; and there were three aids, which were usually raised by the client; viz. to marry the patron's daughter, to pay his debts, and to redeem his person from captivity. But, besides these ancient feudal aids, the tyranny of lords, by degrees, exacted more and more; as aids to pay the lord's debts (probably in imitation of the Romans), and aids to enable him to pay aids or reliefs to his superior lord. In the 25 Edw. I, the statute called *confirmatio chartarum* was enacted, which ordained that none but the ancient aids should be taken. But though the species of aids was thus restrained, yet the quantity of each aid remained arbitrary and uncertain. They were never completely ascertained and adjusted till the statute Westm. 1. 3 Edw. I, c. 36, which fixed the aids of inferior lords at twenty shillings, or the supposed twentieth part of the annual value of every knight's fee, for making the eldest son a knight, or marrying the eldest daughter; and the same was done with regard to the king's tenants *in capite*, by statute 25 Edw. III, c. 11. The other aid, for ransom of the lord's person, being not, in its nature, capable of any certainty, was, therefore, never ascertained. 2. Relief (*relevium*) was incident to every feudal tenure, by way of fine or composition with the lord for taking up the estate, which was lapsed or fallen in by the death of the last tenant. But, though reliefs had their original while feuds were only life-estates, yet they continued after feuds became hereditary, and were, therefore, looked upon, very justly, as one of the greatest grievances of tenure; especially when, at the first, they were merely arbitrary, and at the will of the lord; so that, if he pleased to demand an exorbitant relief, it was, in effect, to disinherit the heir. William the Conqueror ascertained the relief, by directing, in imitation of the Danish heriots, that a certain quantity of arms, and habiliments of war, should be paid by the earls, barons and vavasours respectively; and if the latter had no arms, they should pay a hundred shillings. Afterwards, the composition was universally accepted of one hundred shillings for every knight's fee; as we find it ever after established. But it must be remembered, that this relief was only then payable, if the heir, at the death of his ancestor, had attained his full age of one and twenty years. 3. Primer seisin was a feudal burden, only incident to the king's tenants *in capite*, and not to those who held of inferior or mesne lords. It was a right which the king had, when any of his tenants *in capite* died, seized of a knight's fee, to receive of the heir, provided he were of full age, one whole year's profits of the lands, if they were in immediate possession, and half a year's profits, if the lands were in reversion expectant on an estate for life. This seems to be little more than an additional relief, but grounded upon this feudal reason; that, by the ancient law of feuds, immediately upon the death of a vassal, the superior was entitled to enter and take seisin, or possession of the land, by way of protection against intruders, till the heir appeared to claim it, and receive investiture; during which interval the lord was entitled to take the profits; and, unless the heir claimed within a year and day, it was, by the strict law, a forfeiture. This practice, however, seems not to have long obtained in England, if ever, with regard to tenure under inferior lords; but, as to the king's tenures *in capite*, the *prima seisina* was expressly declared, under Henry III and Edward II, to belong to the king by prerogative, in contradistinction to other lords. The king was entitled to enter and receive the whole profits of the land, till livery was sued; which suit being commonly made within a year and day next after the death of the tenant, in pursuance of the strict feudal rule, therefore the king used to take, as an average, the first fruits, that is to say, one year's profits of the land. And this afterwards gave a handle to the popes, who claimed to be feudal lords of the church, to claim, in like manner, from every clergyman in England, the first year's profits of his benefice, by way of *primitiæ*, or first fruits. 4. These payments were only due if the heir was of full age; but if he was under the age of twenty-one being a male, or fourteen being a female, the lord was entitled to the wardship of the heir, and was called the *guardian in chivalry*. This wardship consisted in having the custody of the body and lands of such heir, without any account of the profits, till the age of twenty-one in males, and sixteen in females. For the law supposed the heir male unable to perform knight-service till twenty-one; but as for the female, she was supposed capable at fourteen to marry, and then her husband might perform the service. The lord, therefore, had no wardship, if, at the death of the ancestor, the heir male was of the full age of twenty-one, or the heir female of fourteen; yet, if she was then under fourteen, and the lord once had her in ward, he might keep her so till sixteen, by virtue of the statute of Westm. 1. 3 Edw. I, c. 22, the two additional years being given by the legislature for no other reason but merely to benefit the lord. The wardship of the body was a consequence of the wardship of the land; for he who enjoyed the infant's estate was the most proper person to educate and maintain him in his infancy; and also, in a political view, the lord was most concerned to give his tenant a suitable education, in order to qualify him the better to perform those services, which, in his maturity, he was bound to render. When the male heir arrived to the age of twenty-one, or the heir female to that of sixteen, they might sue out their livery or *ousterlemain*; that is, the delivery of their lands out of their guardian's hands. For this they were obliged to pay a fine, namely, half a year's profits of the land; though this seems expressly contrary to *Magna Charta*. However, in consideration of their lands having been so long in ward, they were excused all reliefs, and the king's tenants also all primer seisins. When the heir thus came of full age, provided he held a knight's fee *in capite* under the crown, he was to receive the order of knighthood, and was compellable to take it upon him, or else pay a fine to the king. For, in those times, no person was qualified for deeds of arms and chivalry who had not received this order, which was conferred with much preparation and solemnity. This prerogative, of compelling the king's vassals to be knighted, or to pay a fine, was exerted as an expedient for raising money by many English princes, particularly by Edward VI and queen Elizabeth. It was abolished by statute 16

Car. I, c. 20. 5. But, before they came of age, there was still another piece of authority, which the guardian was at liberty to exercise over his infant wards; the right of marriage (*maritagium*, as contradistinguished from *matrimonium*), which, in its feudal sense, signifies the power which the lord or guardian in chivalry had of disposing of his infant ward in matrimony. For, while the infant was in ward, the guardian had the power of tendering him or her a suitable match, without disparagement, or inequality; which if the infants refused, they forfeited the value of the marriage (*valorem maritagii*) to their guardian; that is, so much as a jury would assess, or any one would *bona fide* give to the guardian for such an alliance; and, if the infants married themselves without the guardian's consent, they forfeited double the value (*duplicem valorem maritagii*). This seems to have been one of the greatest hardships of the ancient tenures. 6. Another attendant or consequence of tenure by knight-service was that of fines due to the lord for every alienation, whenever the tenant had occasion to make over his land to another. This depended on the nature of the feudal connexion; it not being reasonable nor allowed, as we have before seen, that a feudatory should transfer his lord's gift to another, and substitute a new tenant to do the service in his own stead, without the consent of the lord; and, as the feudal obligation was considered as reciprocal, the lord also could not alienate his seigniory without the consent of his tenant, which consent of his was called an *attornment*. This restraint upon the lords soon wore away; that upon the tenants continued longer. In England, these fines seem only to have been exacted from the king's tenants *in capite*, who were never able to alienate without a license. The statute 1 Edw. III, c. 12, ordained that one third of the yearly value should be paid for a license of alienation; but, if the tenant presumed to alienate without a license, a full year's value should be paid. 7. The last consequence of tenure in chivalry was escheat; which is the determination of the tenure, or dissolution of the mutual bond between the lord and tenant, from the extinction of the blood of the latter by either natural or civil means; if he died without heirs of his blood, or if his blood was corrupted and stained by commission of treason or felony, whereby every inheritable quality was entirely blotted out and abolished.

These were the principal qualities, fruits and consequences of the tenure by knight-service. The description here given is that of knight-service proper; which was, to attend the king in his wars. There were, also, some other species of knight-service. Such was the tenure by grand serjeanty *per magnum servitium*, whereby the tenant was bound, instead of serving the king generally in his wars, to do some special honorary service to the king in person; as to carry his banner, his sword, or the like; or to be his butler, champion, or other officer, at his coronation. These services, both of chivalry and grand serjeanty, were all personal, and uncertain as to their quantity or duration. But, the personal attendance in knight-service growing troublesome and inconvenient in many respects, the tenants found means of compounding for it, by first sending others in their stead, and, in process of time, making a pecuniary satisfaction to the lords in lieu of it. This pecuniary satisfaction at last came to be levied by assessments, at so much for every knight's fee; and, therefore, this kind of tenure was called *scutagium* in Latin, or *servitium scuti*; *scutum* being then a well known denomination for money; and, in like manner, it was called, in Norman French, *escuage*; being indeed a pecuniary, instead of a military, service. The first time this appears to have been taken was in the 5 Hen. II, on account of his expedition to Toulouse; but it soon came to be so universal, that personal attendance fell quite into disuse. From this period, when the kings went to war, they levied scutages on their tenants, that is, on all the landholders of the kingdom, to defray their expenses, and to hire troops; and these assessments, in the time of Henry II, seem to have been made arbitrarily and at the king's pleasure; which prerogative being greatly abused by his successors, it became matter of national clamor; and king John was obliged to consent, by his *Magna Charta*, that no scutage should be imposed without consent of parliament. But this clause was omitted in his son Henry III's charter; where we only find, that scutages or escuages should be taken as they were used to be taken in the time of Henry II; that is, in a reasonable and moderate manner. Yet afterwards, by statute 25 Edw. I, c. 5 and 6, and many subsequent statutes, it was again provided, that the king should take no aids or tasks, but by the common assent of the realm: hence it was held that escuage or scutage could not be levied but by consent of parliament, such scutages being, indeed, the ground-work of all succeeding subsidies, and the land-tax of later times. By the degenerating of knight-service, or personal military duty, into escuage, or pecuniary assessments, all the advantages (either promised or real) of the feudal constitution were destroyed, and nothing but the hardships remained. Instead of forming a national militia, composed of barons, knights and gentlemen, bound by their interest, their honor and their oaths, to defend their king and country, the whole of this system of tenures now tended to nothing else but a wretched means of raising money to pay an army of occasional mercenaries. In the mean time, the families of all the nobility and gentry groaned under the intolerable burdens which (in consequence of the fiction adopted after the conquest) were introduced and laid upon them by the subtlety and finesse of the Norman lawyers. A slavery so complicated and so extensive called aloud for a remedy. Palliatives were from time to time applied by successive acts of parliament, which assuaged some temporary grievances. King James I consented, in consideration of a proper equivalent, to abolish them all, though the plan proceeded not to effect. At length the military tenures, with all their heavy appendages (having, during the commonwealth, been discontinued), were destroyed at one blow by the statute 12 Car. II, c. 24, which enacts "that all sorts of tenures, held of the king or others, be turned into free and common socage, save only tenures in frankalmoign, copyholds, and the honorary services (without the slavish part) of grand serjeanty."—For further information, see *Socage*, *Fee*, *Entails*, *Villenage*; also *Feudal System*.) In the U. States, the property of lands is allodial; that is, the owner holds of no superior, with the exception of some small remains of socage tenure in New York.

Teocallis; ancient monuments of Mexico. (See *Mexico, Antiquities of*, and *Pyramids*.)

Teos, or Teios; a maritime town on the coast of Ionia, in Asia Minor, opposite Samos. It was one of the twelve cities of the Ionian confederacy, and gave birth to Anacreon (q. v.) and Hecatæus, who is by some deemed a native of Miletus. According to Pliny, Teos was an island.

Teplitz; a celebrated watering place, situated in a pleasant and fruitful plain in Bohemia, with a population of 2500; 40 miles north-west of Prague; lat. 50° 37′ N.; lon. 13° 51′ E. It belongs to the prince of Clary, who has a beautiful castle here, with a fine garden attached to it, which is open to the public. The waters are warm and sulphureous, and are much resorted to. The public baths are twenty-three in number. On the day of the destruction of Lisbon by an earthquake (Nov. 1, 1755), the waters ceased to flow for several minutes, and then rushed out with great violence. The village of Schönau, and several castles, monasteries and mountains in the vicinity, render the environs delightful.—See Reuss's *Guide for Visitors of the Baths* (in German, 1823).

Tequendama, Cataract of. (See *Cataracts*.)

Tercera, or **Terceira**; one of the Azores islands, supposed to have derived its name from its standing the third in this cluster of islands, in point of situation, though the first in dignity. It is 25 miles long, and 15 broad; population, 28,900. Its figure is almost circular, the coasts high, and so surrounded with craggy rocks, that it is deemed impregnable, every accessible part on the coast being defended by strong forts, heavy cannon, and a numerous and regular garrison. The only tolerable port in the whole island is the harbor of Angra (15,000 inhabitants). The island is fertile, pleasant and healthy: the very rocks produce vines. The land yields large crops of corn, and a great variety of fruits. Besides Angra, there are several other towns and large villages in Tercera, with a number of forts and garrisons. Lon. 27° 13′ W.; lat. 38° 38′ N.

Terence, or **Terentius**. Publius Terentius Afer, the celebrated Roman comic writer, was born in Africa (whence his surname *Afer*), about B. C. 194, and, while a child, was bought by Publius Terentius Lucanus, a Roman senator, who took him to Rome, and gave him a good education. His master having emancipated him, the young African now assumed the name of his benefactor, and soon acquired reputation and friends by the talents which he displayed in his comedies. Lælius and Scipio Africanus (the destroyer of Carthage and Numantia) admitted him into their intimacy; and some accounts aver that they assisted him in the composition of his plays. About the year 161, he went to Greece, probably with the purpose of collecting new materials for the theatre. While on his return to Italy, he suffered shipwreck, and either perished in the waves, or died not long after. Of his dramatic works, six comedies alone are extant: the Adrian (acted at Rome, B. C. 167; the Eunuch (performed 161); *Heautontimoroumenos*, or the Self-Tormentor (163); the Adelphi, his last piece, brought out in Rome the year before his death; Phormio, or the Parasite; and Hecyra, or the Step-Mother. The comedies of Terence were much admired by the cultivated Romans, and were likewise esteemed for their prudential maxims and moral sentences. If we compare him with his contemporaries, he will be found to have been much in advance of them in point of style. His language is pure; but, in originality of imagination, he is inferior to the Greeks, and his predecessor Plautus. Most of his plays are little more than translations from the Greek; but he is valuable to us on this very account, as giving us an idea of his model Menander. His characters have much truth of nature; but they are often superficial. His plots are usually simple: greedy courtesans, trickish slaves, miserly fathers, and prodigal sons, are the chief persons of his drama, and a marriage his ordinary *denouement*. The best editions of his works are those of Lindenbrog (Paris, 1602; Frankfort, 1623) and Westerhof (Hague, 1726): that of Bentley (London, 1726; Amsterdam, 1727, and Leipsic, 1791) is particularly valuable in regard to the metre, but is disfigured by rash conjectures. Other useful editions are those of Zeune (Leipsic, 1787, 2 vols.), Lenz (Jena, 1785), Schmieder (Halle, 1794), Bothe (Berlin, 1806), Bruns (Halle, 1811), and Perlet (Leipsic, 1820). We have an English translation by the elder Colman.

Tereus. (See *Philomela.*)

Termagaunt, or Turmagaunt. The origin of this name is altogether uncertain. Various etymologies have been proposed, but none of them is at all satisfactory. The old English writers frequently speak of *Termagaunt* and *Mahoun* (Mohammed), and the Norman-French writers couple *Tervagan* (of which the English form is a corruption) with *Mahum* and *Apollin* (Apollyon). Ariosto and Tasso also speak of *Macone e Trivigante* (Mohammed and Termagaunt). Both of these personages were dramatic characters in the old mysteries, at a time when legends of the Saracens were the most popular subjects of poetry and the drama in Europe. (See Ritson's *Metrical Romances*, notes, vol. iii, p. 251 seq., or Todd's *Spencer*, note to C. vii, st. 47.) The modern signification of the word, *shrew*, *virago*, is evidently derived from the turbulent and violent character of the old dramatic personage.

Terminalia. (See *Terminus.*)

Terminism, in German philosophy, or **Determinism**; the doctrine that all things happen through a necessary connexion of causes and effects extending through all nature. In theology, *terminism* is the doctrine that God has assigned to every one a term of repentance, during which his salvation must be worked out.

Terminology of a science or art; that branch which teaches the meaning of its technical terms; also the aggregate of these technical terms. In some sciences, it is of particular importance, as in botany, in which not even a leaf can be described without an agreement on certain technical terms. The terminology is generly derived in a great measure from the nation which has done most for a particular art or science, as the military terminology from France, the naval from Holland and England.

Terminus; a divinity at Rome, who was supposed to preside over bounds and limits, and to punish all unlawful usurpation of land. His worship was first introduced at Rome by Numa, who persuaded his subjects that the limits of their lands and estates were under the immediate inspection of heaven. His altar was on the Tarpeian rock. He was represented with a human head, without feet or arms, to intimate that he never moved, wherever he was placed. (See *Hermes.*) The people of the country assembled once a year with their families, and crowned with garlands and flowers the stones which separated their different possessions, and offered, at first, cakes and fruits, at a later period, lambs and pigs, to the god who presided over their boundaries. It is said that, when Tarquin the Proud wished to build a temple on the Tarpeian rock to Jupiter, the god Terminus refused to give way, though the other gods resigned their seats with cheerfulness; and his altar therefore remained in the temple of Jupiter. But, as Terminus could be worshipped only in the open sky, a hole was left in the roof of the temple directly over the altar. The resistance of the god was considered an omen that the boundaries of Rome should never be encroached upon. The *Terminalia* were annual festivals at Rome, observed in honor of the god

Terminus, in the month of February. It was then usual for peasants to assemble near the principal land-marks which separated their fields, and, after they had crowned them with garlands and flowers, to make libations of milk and wine, to sacrifice a lamb or a young pig upon altars of turf, and to sing songs in honor of the god. Besides these private festivals, there were public *Terminalia* celebrated on the Roman frontiers in the earlier periods of the republic. These public festivities, however, went into disuse after the territories of Rome were extended by conquest. The *Terminalia* had also an allusion to the close of the year, as the Roman year was considered to end on the 23d February, when they were solemnized, the remaining days being considered as intercalary.

Termites; sometimes called *white ants*, from their mode of life. They belong, however, to a different order of insects—the *neuroptera* of Linnæus. They live in societies, often prodigiously numerous, and composed of three sorts of individuals, as with the bee and ant. The most numerous are the workers, which have a rounded head, and the abdomen sessile and club-shaped. Among these may be discovered, occasionally, individuals of the second sort, called *soldiers*, which are easily distinguished by the larger size of the head and jaws. Each colony contains but a single perfect male and female. At a certain season, the termites acquire four large equal wings: the form of the body is then somewhat changed, and the color becomes darker. They now fill the air in countless numbers, and serve as food for various animals, and even for man in some parts of the globe. The few pairs which escape, if discovered by some wandering workers of their own species, are protected by them, and found new colonies. The termites are the greatest pest of tropical climates: they destroy all articles of furniture made of wood, cloths, &c.; they enter the foundations of houses, and eat out the whole interior of the timbers, so that they may appear perfectly sound externally, while they will crumble under the slightest blow. An African species is celebrated for the edifices it rears, in the form of a sugar-loaf, ten or twelve feet in height, and so solid that the wild cattle mount upon them without breaking through. Internally they are divided into numerous apartments, and have subterranean galleries connected with them, from the extremities of which the insects issue to commit depredations: when these structures are broken open, the soldiers fight with great fury, and bite every thing they meet with. Another species of the same country builds its nest among the branches of trees, sometimes at the height of sixty or eighty feet from the ground. We have one species in the U. States, which lives in small communities, chiefly in decayed trunks of trees.

Terms are those spaces of time wherein the courts of justice are open for all that complain of wrongs or injuries, and seek their rights by course of law or action, in order to their redress. During the English terms, the courts in Westminster hall sit and give judgments, &c.; but the high court of parliament, the chancery, and inferior courts, do not observe the terms; only the court of king's bench, common pleas, and exchequer, the highest courts at common law. Of these terms there are four in every year: viz. Hilary term, which begins the 23d of January, and ends the 12th of February, unless on Sundays, and the day after; Easter term, which begins the Wednesday fortnight after Easter-day, and ends the Monday next after Ascension-day; Trinity term, which begins on the Friday after Trinity Sunday, and ends the Wednesday fortnight after; and Michaelmas term, which begins the 6th and ends the 28th of November.

Ternate. (See *Moluccas.*)

Ternaux, William Louis, a woollen manufacturer at Paris, was born at Sedan, Oct. 8, 1763, and has acquired, by the versatility of his talents, and his public-spirited activity, a high place among the most distinguished patriots and philanthropists of his country. At the age of fourteen, he became a partner in his father's house, during whose absence he was for two years head of the establishment. He justified the confidence which had been reposed in him on this occasion; and perhaps no single individual in Europe has established so many and various manufactures. He has himself invented several valuable machines, and introduced important improvements in the processes. He was the first to set up spinning machines in France. He has improved the breed of sheep, and constructed corn magazines, &c. From 1789 to 1792, he was one of the members of the common council of Sedan, almost all of whom perished on the scaffold in 1793, for having arrested the conventional commissioners, who, after the 10th of August, were sent to suspend general Lafayette. It was by a kind of miracle that Ternaux escaped. By his conduct on this occasion, and by his conscientious discharge of his municipal duties, he acquired the warm esteem of his fellow-citizens. His extensive woollen manufactories are remarkable for the excellence of their products; and, at the yearly exhibitions of national industry, he has constantly obtained the prizes. To show the extensive commerce which he carries on, it will be sufficient to state that he had, at one period, manufactories at Sedan, Rheims, Aix-la-Chapelle, Liege, Ensival, Louviers and Elbeuf, and agents and warehouses at Paris, Bourdeaux, Genoa, Leghorn, Naples, and many other places, in which he employed about 6000 workmen, and from 120 to 150 clerks. Notwithstanding all this weight of business, he was an active member of the legislature, gratuitous vice-president of the general council of manufacturers, a member of the general council of the department of the Seine, and of the commercial chamber of Paris. During the hundred days (1815), he adhered to the Bourbons, and, in 1819, was created baron by Louis XVIII. In the chamber of deputies he defended liberal principles with firmness; and his speeches on financial, commercial and manufacturing subjects were distinguished for extent of information and judicious views. Europe is indebted to him for the introduction of the Cashmere goat. (q. v.) Ternaux makes the noblest use of his large fortune, and enjoys the respect and esteem of his countrymen.

Terni, a town in the States of the Church, delegation of Spoleto, in the fertile valley of the Nera, the birth-place of Tacitus, and of the emperors Tacitus and Florian, contains some interesting ruins of the old Latin colony of Interamna (lying between two arms of the Nera). Four miles east from Terni is the celebrated *caduta del marmore*, or fall of the Velino or Evelino, 300 feet in height, well known to the readers of Byron by his glowing description in Childe Harold (iv. 69—72). In the notes to this passage (37 and 38), he says, "It is worth all the cascades and torrents of Switzerland put together; which are rills in comparison. It is singular enough that two of the finest cascades in Europe should be artificial—this of the Velino and the one at Tivoli." (See *Cataract.*) This "matchless cataract" is, in fact, the work of M. Curius Dentatus (B. C. 270), who caused the rock to be cut through for the purpose of draining the marshes, and making an outlet of the Velino. Clement VIII caused the old canal of Dentatus to be reopened and enlarged. In the garden of the episcopal palace are the ruins of an amphitheatre, and in the church of St. Salvador (St. Savior) the remnants of a temple of the sun. The town has about 7000 inhabitants; and much oil and wine are produced in the neighborhood. Near Terni the Neapolitans were defeated by the French in 1798. Forty-five miles north of Rome.

Terpander, a distinguished Greek poet and musician, flourished about B. C. 650, was born at Methymna or Antissa, on the island of Lesbos. When Lacedæmon was distracted by internal troubles, and the oracle was consulted respecting the means of quieting them, it commanded the Spartans to send for the Lesbian singer. He came, and restored peace and quiet, by the sweetness of his songs, which he accompanied on his lyre. His melodies were afterwards known as the Lesbian melodies; and, for a long time, they served as universal models. He did much to improve the art of music, and is said to have added three new strings to the lyre. Other accounts ascribe this improvement to Orpheus, Amphion, or even to Apollo. Terpander was probably the first to introduce the seven-stringed lyre into Sparta. The invention of the musical notation has also been attributed to him, and with some degree of probability, although some accounts refer it to Pythagoras, who lived a century later. The Lacedæmonians sang his songs at their festivals; and hence he has also been called the inventor of the *scolia*, or drinking songs, sung at the feasts of the ancient Greeks.—See *Scolia, h. e. Carmina convivalia Græcorum*, by Ilgen (Jena, 1798).

Terpodion; one of the finest musical keyed instruments invented in modern times. The interior mechanism consists of wooden staves, which vibrate by the friction of a wooden cylinder, set in motion by a wheel, and thus produce the sweetest tones, susceptible of the finest swell and fall. The higher tones much resemble those of a flute, the lower those of the organ. It is particularly fine as an accompaniment of vocal music, but is less fit for compositions of a lively character. John David Buschmann of Friedrichsrode, near Gotha, is the inventor, and has exhibited his instruments in the large cities of Germany and England.

Terpsichore (*she who loves dancing*); one of the Muses, the inventress and patroness of the art of dancing and lyrical poetry. She is generally represented with the tambourine (*tympanum*), crowned with flowers, and in a mirthful attitude.

Terra, the Earth, was a cosmological divinity of the ancients. After the chaos, says Hesiod, the extended earth was the abiding place of all the immortals, who inhabit the tops of snowy Olympus. By her own power she brought forth the starry heaven (*Uranos*), the lofty mountains, and the sea (*Pontus*). By Uranos she became the mother of the Titans (q. v.), Thea, Rhea, Mnemosyne, Themis, Phœbe, Tethys, the Cyclops, and the hundred-handed giants (Centimani). Uranos imprisoned these children, immediately after their birth, in a dungeon. Terra, meditating revenge, prepared a sickle of adamant, and persuaded her sons to castrate their father. Saturn perpetrated the deed. Terra received the drops of blood which issued from the wound, by which being impregnated, she brought forth the Furies, Giants, and the Melian nymphs. By her son Pontus, she afterwards had Nereus, Thaumas, Phorcys, Ceto and Eurybia. Dissatisfied also with Saturn, she promised her daughter Rhea to bring up the new-born Jupiter, and carried him to Crete. When he had grown up, she aided him in obtaining the throne, advising him to free the imprisoned Centimans and Cyclops.

Terra Cotta (*Italian*) is the common name for a very large class of remains of antiquity, which have not, till recent times, been treated with the attention which they deserve. The mythical history of the Greek art celebrated Dibutades, Rhœcus, Theodos, as masters in works of clay, without, however, stating whether these works were baked, or merely dried in the sun. The Greeks may, at a later period, have given up the use of clay for large works, after they had become accustomed to marble and bronze; but clay was still used for fine pottery, and for lamps, of which so admirable specimens have come down to us. In Tuscany and Rome, however, works of sculpture, both entire figures and reliefs, in terra cotta, have been found in abundance. These are not generally of large size, though whole friezes and images on pediments were made of terra cotta in antiquity (*fastigia templorum fictilia*), but manifest the great skill of the *officinæ figulinæ*, which were common in Rome and Italy. The works of Damophilus, Arcesilaus and Pasiteles may have come down to us in copies, among the remains which, since the time of count Caylus, have been more assiduously brought together in museums of antiquities. A collection, made on the spot, by Mr. Charles Townley, belongs at present to the treasures of the British museum (Description of the Collection of ancient Terracottas in the British Museum, with thirty-nine engravings, London, 1810, small folio); another, collected by Seroux d'Agincourt, was left by him to the museum of the Vatican (*Recueil de Fragmens de Sculpture antique en Terre cuite, par M. Seroux d'Agincourt*, Paris, 1814, 4to.). Earlier than the appearance of these works, some *relievi* found at Velletri were described in the work *Bassirilievi Volschi in Terra cotta* (Rome, 1785, fol.). Accurate examination, particularly of the vessels, has shown a variety in the application of this material, which may lead to results of much advantage to modern art. The sorts of works distinguished are those dried in the air; those simply baked; those baked and colored, but not with fixed colors; those varnished, and having colors burnt in; a mixed species, in which the colors are in part fixed, in part merely painted on the substance; and finally, the most costly of all, works with rich gilding. These different productions, as regards the material, are of the most various fineness. Much of what has come down to us may have been merely models and casts (*typi, protypa, ectypa*). The investigations of professor Busching into the history of this branch of the fine arts are important. He has traced it in the middle ages, and shown, by the monument of duke Henry IV (the Minnesinger) in the church of the cross at Breslau, that this art was successfully practised in Silesia in the thirteenth century (about 1290). Busching has illustrated this subject in a magnificent work.

Terra, or Tierra del Fuego; a group of islands lying to the south of the continent of South America, from which it is separated by the straits of Magellan (see *Magalhaens*), and extending from lat. 56° to 53′ 30′ S. The southern extremity is cape Horn. (q. v.) It received its name, signifying *Land of Fire*, from the fires seen along its shores by the discoverer Magalhaens, who supposed them to be volcanic. The existence of volcanoes here has been doubted; but captain Hall saw one in activity in 1820, and captain Weddell found lava on the coast. The interior of these islands has never been explored. So far as they are known to us, they are rugged and unprolific. The climate is severe, and there are summits visible to mariners which appear to be covered with perpetual snow. Captain King states the mean temperature during the three winter months at 34.°5, the maximum being 49.°5, and the minimum 12.°6. The inhabitants, at least those on the coasts, are in a very rude state; but they are friendly and peaceable: they live by fishing. The seals are numerous on the coasts, and dogs, otters and guanacoes are also found here. The three principal islands of the group are King Charles's Southland, to the east, Santa Ines, or South Desolation, on the west, and Clarence island, lying between them. The latest information concerning this region is contained in Weddell's Voyage towards the South Pole (London, 1825), and the Journal of the Royal Geographical Society for 1831, art. xi, containing the results of the examination of the coasts by captain King.

Terra Firma (that is, *firm land*); mainland or continent, in opposition to insular territories. In Italy, the name of *Terra firma, or il dominio Veneto*, is given to the continental provinces of Venice, in contradistinction to the insular portions. By it is therefore signified the duchy of Venice (q. v.), Venetian Lombardy, the marquisate of Tarvis, the duchy of Friuli and Istria.—Under this name was formerly comprehended a vast extent of country in South America, forming a government under the authority of the crown of Spain, including several extensive provinces, and three audiences, which were fixed at Panama, Quito, and Santa Fé de Bogota. The large provinces were Terra Firma Proper, or Darien, Popayan, Quito and New Grenada, all of which were again subdivided into several smaller provinces or jurisdictions. These provinces afterwards formed the viceroyalty of New Grenada, and now constitute the republic of Colombia or New Grenada. (See *Colombia*, and *Venezuela*.)

Terra Magellanica. (See *Patagonia*.)

Terra Sigillata (that is, *sealed earth*); called also *Lemnian earth;* a sort of bole (q. v.) found in the island of Lemnos, which was formerly much used in medicine, as a styptic, &c. It derives its name from the circumstance of its being impressed with the seal of the grand seignior, or the governor of the island. It is, however, found in other places in the East, as Armenia and Malta, and in Italy, France, &c. The Lemnian bole is detersive, like fuller's earth. (See *Clay*.)

Terracina; a town in the Campagna di Roma, 47 miles south-east of Rome; population, 9000. It is situated at the southern extremity of the Pontine marshes, in a picturesque situation, but rendered unhealthy by the surrounding marshes. It was anciently the capital of the Volsci, and named *Anxur*. The Greeks called it *Trachyna*, corrupted into *Terracina*. It had once a harbor; but that is now choked up. Near Terracina are considerable fragments of the *Via Appia*, made from Rome to Capua.

Terrain; a French word, used in military language for the natural condition of the ground on which any military operation takes place; and the expression embraces, therefore, all objects on the surface of the earth, which can affect the disposition to be made of troops. In English, the word *ground* is generally used. The Germans divide the doctrine of *terrain* into the general, which is much the same as that which others call *military geography* (q. v.), and special, which is the accurate knowledge of a particular theatre of war. General conclusions may be drawn from experience, in which geology is often an assistant; but particular observation of the ground is always indispensable.

Terras. (See *Cements*.)

Terray, Joseph Marie, a notorious French minister of finance, born in 1715, entered the church, became an abbé, member of the spiritual bench of the parliament of Paris, insinuated himself into favor at court, and, during the last days of the reign of Louis XV, was minister of finance. Finding a great deficit in the treasury, he employed the most disgraceful means to cover it, and publicly declared that he held his office only to rob, and because he excelled in that operation. He contrived new impositions, abolished the pensions which had been previously granted, and thus reduced many individuals to destitution. In addition to this, he treated with derision the unfortunate victims of his policy, who applied to him for relief. Louis XVI removed this monster (1775); and a horrible disease, the consequence of his excesses, put an end to his life in 1778. He was the subject of general execration; and even his services in restoring order into the finances were overlooked, since he did not prevent the most shameless dissipation of the public money by the courtiers.

Terre Neuve; the French for *Newfoundland*. (q. v.)

Territory, in the U. States, a division of the country not included within the limits of either of the states of the confederacy, and which has not been admitted into the Union on the footing of an independent state. The history of the policy of this republic in regard to the public domain, and the manner in which that domain was acquired, has been given in our article *Public Lands*. The basis of the political organization of these territories was laid by the ordinance for the government of the territory of the U. States north-west of the river Ohio, July 13th, 1787. This ordinance provides for the appointment of a governor by congress, and for a representative assembly, chosen by the people of the territory, for conducting the government of the same, making laws, appointing magistrates, &c. The legislature is authorized to elect a delegate, to represent the territory in the congress of the U. States, who enjoys a seat and the right of debating, but has no vote. It was likewise provided by this ordinance, that there should be neither slavery nor involuntary servitude in this territory. After the adoption of the present constitution (1789), this ordinance was so far modified as to give the president, by and with the consent of the senate, the appointment of the territorial officers, and some other powers which had been originally conferred on the congress (1789, ch. 8). As the population in the region above designated gradually increased, new territories were successively created, and admitted into the Union as independent states. Thus Ohio became a state in 1802. Indiana received a separate territorial government in 1800, and was admitted into the Union in 1816. Illinois became a distinct territory in 1809, and a state in 1818. Michigan territory was constituted in 1805. The territory south of the river Ohio was, by act of congress (1790, ch. 41), declared to be subject to the provisions of the ordinance of 1787. This territory was received into the Union, as the state of Tennessee, in 1796. In a similar manner, the territory of Louisiana has been divided into Orleans and Louisiana territory, Missouri state and territory, and Arkansas territory. (See *Louisiana Territory*.) Alabama territory was constituted in 1817, and became a state in 1820; and Mississippi, which received a territorial government in 1798, was admitted into the Union in 1817. Florida, which was acquired in 1821, was formed into a government under the name of the territory of Florida, in 1822. (See the separate articles.)

Territorial System. (See *Church*, vol. iii, page 183, right hand column.)

Terror, Reign of. During the French revolution, Marat and Robespierre, in the beginning of March, 1793, introduced the system of terror, so called, under the pretext, that the condition of France left no other means to save her. To understand this phenomenon in the history of man, requires an accurate knowledge and a comprehensive view of the state of France, at that time convulsed by civil war, fighting single-handed against the greater part of Europe, and filled with a population which the clergy had done almost nothing to instruct, and the court and nobility every thing to corrupt. History affords many instances of bloodthirsty individuals; but here we find a large portion of a nation urging the slaughter of persons of all sexes, ages and conditions, while their mouths were full of high-sounding phrases of liberty, equality, virtue and justice, perverting a thousand innocent acts to crimes, and even inventing new crimes, e. g. *négotiantism*, in Bordeaux, to suit the occasion. The reign of terror shows a more general frenzy than any other period of history. One of the main causes of this gigantic madness must be sought for in the disorganization of political society in all its branches, which began with Louis XIV, and frightfully increased during the reigns of his successors. The ascribing of the mischief to the writings of the philosophers, so called, shows an ignorance of the nature of man and of society. Such madness could result only from deep-seated disease and depravity, to which many stimulants were added. The revolutionary tribunal was the first great instrument of the terrorists. This was established March 11, 1793, but did not receive its name until the 8th of Brumaire (October, 1793), when the Mountain party in the convention triumphed over the Girondists. (q. v.) The object of the revolutionary tribunal was to punish all those who should oppose the progress of the revolution, and incur the suspicion of adhering to the royal family. It may easily be imagined what a field such a tribunal would afford to malignity, hatred, and the spirit of persecution, as it was bound by no rules, sentenced only to death, never investigated the points of the accusation, and, at last, hardly the names of the accused. After the fall of the Girondists in 1794, and the accession of Robespierre and his accomplices to power, the trial of individuals ceased. Fouquier

Tinville and his comrades daily handed in lists of persons charged with treason. These were brought in crowds before the tribunal, the accusation against them read, and sentence of death immediately pronounced, without even examination being had, to ascertain whether the subjects of the accusation were actually the persons before the court; and, in fact, the confounding of persons of the same name often brought individuals to the guillotine, who had never been accused. Similar revolutionary tribunals were established in the large towns in the provinces, and the same tragedy was acted in Nantes, Lyons, Arras, Strasburg, and many other places. As this mode of exterminating the pretended enemies of the republic was too slow to satisfy the party in power, they shot and drowned the accused by hundreds. The intrigues of the royalists must be admitted to have contributed to these excesses; and the object of Robespierre was to give energy to the government, and secure the country from invasion.* Many of his associates, however, were actuated by the love of plunder. The system of terror at length destroyed itself. A part of the terrorists became victims to the very system which they had established, and the overthrow of the rest soon followed.† With the revolution of Thermidor 9 (July 27, 1794), or with the overthrow of Robespierre, terrorism ceased to be the professed system of government; but its consequences remained.‡ Prudhomme, a republican, not unfriendly to the revolution, and who wrote during the period of excitement, has left six volumes of details of this deplorable period. Two of the six volumes contain an alphabetical list of all the persons put to death by the revolutionary tribunal, with their professions, domicils, the dates of their condemnations, the place and day of their execution, &c. We find among the 18,613 victims

Noblemen	1,278
Noblewomen	750
Females of the class of mechanics and peasants	1,467
Nuns	350
Priests	1,135
Men not noble, of various classes	13,633
Total	18,613

Women who died in consequence of premature delivery	3,400
Women pregnant and in child-bed	348
Women killed in the Vendée	15,000
Children " "	22,000
Whole number who perished in the Vendée	900,000

Victims under the proconsulate of Carrier, at Nantes	32,000
Including	
Children shot	500
" drowned	1,500
Women shot	264
" drowned	500
Priests shot	300
" drowned	460
Noblemen drowned	1,400
Mechanics drowned	5,300

Victims in Lyons	31,000

These numbers do not comprehend the victims of the massacres at Versailles, Carmes, l'Abbaye, Avignon, the fusillades at Toulon and Marseilles, after the sieges of those places, and the massacre of the entire population of the little town of Bédoin, in Provence. More than 50,000 revolutionary committees were established in France, to enforce the law against the suspected (that of Sept. 21, 1793). Cambon, member of the convention, calculates that they cost the country 591,000,000 francs (in assignats) a year: each member received three francs a day; and there were 150,000 who had the right to designate for death. Paris alone had sixty committees. It will be seen from the above, that the nobles, priests, nuns, and monks, form but a small part of those who died by the guillotine. The Girondist Riouffe, a prisoner with madame Roland and others at the *Conciergerie*, gives the most appalling details in his *Mémoires d'un Détenu*. Among other things, he says, *Déjà un aquéduc immense qui devoit voiturer du sang avoit été creusé à la place Saint-Antoine. Disons-le, quelque horrible qu'il soit de le dire, tous les jours le sang humain se puisoit par seaux, et quatre hommes étoient occupés, au moment de l'exécution à les vider dans cet*

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* Louvet, in his memoirs, expresses his conviction that both Robespierre and Marat were in the pay of the allies!

† When Danton (q. v.) was thrown into the same dungeon in which Hébert had been confined, he said, *C'est à pareille époque que j'ai fait instituer le tribunal révolutionnaire. J'en demande pardon à Dieu et aux hommes, mais ce n'etuit pas pour qu'il fût le fléau de l'humanité*. And when he was sentenced by that tribunal, he exclaimed, *J'entraîne Robespierre; Robespierre me suit.* (See Thier's *History of the Revolution.*)

‡ During the prevalence of this system, Charles de la Bussière, secretary of the committee of public safety (q. v.), saved many persons, by destroying the papers containing the accusations against them.

aquéduc. More horrid details may be found in the preface of Châteaubriand's *Etudes ou Discours Historiques.* A list of all the persons who perished by the guillotine in that period, is given in the above-mentioned work of Prudhomme.

Terrorism. (See *Terror, Reign of.*)

Tertiarians. (See *Orders, Religious.*)

Tertiary Formations. (See *Geology.*)

Tertullian, Quintus Septimius Florens, considered the most early Latin father extant, was born at Carthage, about the middle of the second century. His father was a centurion under the proconsul of Africa; and Tertullian was at first a pagan, although when or where he embraced the Christian religion does not appear. He received a liberal education, and was well versed in Greek and Roman literature, and learned in the Roman law. He flourished chiefly under the reigns of the emperors Severus and Caracalla; and Jerome mentions a report that he lived to a very advanced age. He employed himself vigorously in the cause of Christianity, but, towards the latter part of his life, quitted the Catholic church to join the Montanists, out of which he formed a sect of his own, named *Tertullianists.* (See *Montanus.*) The ground of his separation related rather to discipline than doctrine, being favorable to the austerities inculcated by Montanus. Of the personal history of Tertullian, little is known. Of his writings, the most noted is his Apology for the Christian Religion, which contains much information on the manners and conduct of the early Christians, and asserts the falsehood of the calumnies by which they were assailed, and the injustice of persecuting them. Connected with this work are his two books *Ad Nationes*, in which, with his characteristic vehemence, he carries his attack into the quarters of his opponents. He also wrote against various heresies, and several tracts on baptism, on idolatry, &c. In one of these, upon Public Spectacles, he dissuades Christians from attending shows and festivals, as partaking of idolatry; and he luxuriates in the anticipation of the transport with which he shall survey the torments of persecutors, philosophers, poets and tragedians in another world. This father was a man of lively parts, but he displays little judgment in his reasoning; and, while led by his temper to violence and exaggeration, he was at the same time credulous and austere. His style is concise and figurative, but harsh, unpolished, and obscure. His works have been frequently edited, both collectively and separately, particularly his Apology. Of the entire works, the editions of Rigaltius (Paris, 1641), and of Semler (Halle, 6 vols., 1770), are esteemed the best. The best edition of the Apology is that by Havercamp (Leyden, 1718, 8vo.). He is not to be confounded with St. Tertullian, who suffered martyrdom in 360.

Teschen; a town of Austrian Silesia, which gives name to a circle; 30 miles east of Troppau; lon. 18° 41′ E.; lat. 49° 43′ N.; population, 5379. The inhabitants carry on some commerce in leather, wood, and wine. Here is a manufacture of fire-arms, of a particular kind, called, from the town, *teschine.* In the year 1779 (May 13), a treaty of peace was concluded here between the emperor Joseph II (q. v.) and the king of Prussia, Frederic II (q. v.), which put an end to the war for the Bavarian succession. (See *Bavaria, Maria Theresa,* and *Confederation of the Princes.*)

Tessellated Pavement (Lat. *tessella,* diminutive of *tessera*); a pavement of rich mosaic work, made of curious square marbles, bricks, or tiles, in shape and disposition resembling dice. Various ancient specimens of these have been from time to time exhumed in Italy and other countries of Europe.

Tessin, or **Ticino**; one of the Swiss cantons, bounded north by Uri, north-east by Grisons, south-east and south by Austrian Italy, south-west by Sardinian Milanese, and west by Valais. (See *Switzerland.*) The inhabitants are mostly Italians and Catholics. It is composed of what were formerly called the Italian bailiwicks, which, though long subject to Switzerland, were not formed into a canton till 1815. Bellinzona is the capital. It is extremely mountainous, the ramifications of the Alps dividing it into more than twenty distinct valleys. It has a mild climate; is well watered and fertile; and no country is more remarkable for scenery, at one time rich and beautiful, at another awful and sublime. The government has heretofore been unfavorable, the inhabitants ignorant and indolent, and agriculture and manufactures in a backward state. The first demands of reform in the cantonal administrations (in 1830) proceeded from Tessin, in which there had been many abuses in the government.

Tessin, Charles Gustavus, count of, was born at Stockholm, in 1695, and travelled, from 1714 to 1719, in Germany, France, and Italy. In the political discussions which arose in Sweden after the death of Charles XII, he declared for the party of the Hats, of which his influence caused the decided triumph. He was nominated president of the assembly of nobility in the diet of 1738. From 1739 to 1742, he resided as ambassador at Paris. From 1747 to 1752, the count had the direction of foreign affairs as president of the chancery; and, at the same time, he was appointed governor of the prince royal, afterwards Gustavus III. He addressed to his pupil a series of letters relative to morals, politics, and administration, which have been translated into English and other languages. The English version is entitled Letters to a Young Prince (London, 1755, 8vo.). In 1761, he resigned all his employments, and settled at his estate of Akeroe, in Sudermania, where he died in 1770. He promoted the establishment of the academy of sciences at Stockholm; and besides his Letters, he wrote a number of discourses and essays. A description of a cabinet of natural history which he had formed, was published in 1753, under the title of *Museum Tessinianum.*

Test Act. (See *Corporation and Test Acts.*)

Testacea. (See *Conchology.*)

Testament, Old and New. The practice of calling the Hebrew and Christian sacred writings the books of the Old and New Testament, arose from the language of the old Latin translation of these books (the *versio vulgata* or *vulgate*). The Latin word *testamentum* (will) was considered to correspond to the Greek διαθηκη, which often occurs both in the Alexandrian version of the Hebrew Scriptures, and in the sacred books of the Christian revelation, and which, properly, signifies a *covenant*, a *league*. As early as the patriarchal age, the divine revelations and instructions with which the Hebrews were blessed, were considered in the elevated light of a covenant between God and the patriarchs, and afterwards between God and the whole Hebrew nation. See the fifteenth chapter of Genesis, in which God confirms to Abraham the promise of the birth of Isaac and of the possession of Palestine by his descendants, by a solemn covenant. The law given on mount Sinai, and the whole Mosaic system of religious doctrines and ceremonies, were closely connected with these divine promises to the patriarchs and their race, and, in fact, were but a further developement, or the perfect completion of them. The Mosaic dispensation was, therefore, in conformity to the divine will, represented as a league or covenant between God and the Hebrew nation; a league which solemnly engaged the Hebrews to worship Jehovah alone as the only true God, and to obey his commandments faithfully, while, in return, they received the divine promise that they should be regarded as a chosen people, while they continued faithful and obedient. (See *Exodus*, ch. xxiv, and *Jeremiah* xxxi, 22.) The intimate connexion which exists between the Hebrew revelation and the more perfect dispensation announced by Christ, for which, in the course of divine Providence, the former was but a preparation, would naturally lead Jesus and his apostles to designate the new religion as a new and more perfect covenant, made, through the mediation of Christ, between God and the whole human race, without distinction or exclusion. The sacred and elevated idea of such a covenant corresponds with the whole spirit and character of Christianity, considered as a positive, revealed religion. Whilst God proclaims, through Christ, forgiveness of sins and eternal happiness to all men who evince a firm, living, active faith in Jesus, men are bound, through Christ, to comply with these conditions of salvation. In this sense, the Christian Scriptures often speak of an old and a new, the first and the second covenant (see the *Gospel of St. Matthew*, xxvi, 28; *St. Mark*, xiv, 24; *Hebr.*, viii, 8, ix, 15; *Galatians*, iv, 24); and the Hebrew Scriptures themselves are called the *old covenant* (2 *Cor.* iii, 14). The language of the Bible itself sufficiently explains, therefore, why the early Christian church called its sacred writings the "books of the new covenant" (καινη διαθηκη). The Latin vulgate, then, having, as we have before observed, used this expression *testamentum* (as in *Gen.* ix, 9, 12; xiii, 15), it became common to designate the Scriptures as the books of the *Old* and *New Testament*, in the sense of *old* and *new covenant* (see, for instance, Tertullian's treatises against Marcion, b. iv, ch. 1, and against Praxeas), and not in the common sense of the word, *last will.*

Testament. (See *Will.*)

Testudo, in zoology. (See *Tortoise.*)

Testudo, in the military art of the ancients, was a kind of cover or screen which the soldiers (e. g., a whole company) made themselves of their bucklers, by holding them up over their heads, and standing close to each other This expedient served to shelter them from darts, stones, &c., thrown upon them, especially those thrown from above, when they went to the assault.—*Testudo* was also a kind of large wooden tower, which moved on several wheels, and was covered with bullocks' hides, serving to shelter the soldiers when they approached the walls to mine them, or to batter them with rams.

Tetanus (from τεινω, I stretch); a spasmodic rigidity of the whole body. The body becomes stiff, the breathing heavy, but the senses remain uninjured. If the lower jaw is drawn to the upper with such force that they cannot be separated, the disorder is called *locked jaw* (*trismus*).

Tethys; the greatest of the sea deities, wife of Oceanus, and daughter of Uranus and Terra. She was mother of the chief rivers of the universe, such as the Nile, the Alpheus, the Mæander, Simois, Peneus, &c., and about 3000 daughters, called *Oceanides*. Tethys is confounded, by some mythologists, with her granddaughter Thetis, the wife of Peleus and the mother of Achilles. Her name signifies *nurse*, and seems to contain an allusion to the old notion, that water was necessary for the generation and nourishment of all things. The word *Tethys* is poetically used to express the sea.

Tetrachord, with the ancient Greeks; a scale of four tones. The ancients divided their musical system into tetrachords, as we divide ours into octaves. Therefore they only required, in their singing schools, four syllables for solmization, whilst, in modern times, six syllables were introduced by Aretino. The tetrachords were originally only diatonic; at a later period, also, chromatic and enharmonic.

Tetraedron, or **Tetrahedron**, in geometry, is one of the five Platonic or regular bodies or solids, comprehended under four equilateral and equal triangles; or it is a triangular pyramid of four equal and equilateral faces.

Tetragon, in geometry; a quadrangle, or a figure with four angles.

Tetralogy. (See *Trilogy*.)

Tetrandria; the fourth class in Linnæus's sexual system.

Tetrapla; a Bible disposed, by Origen, under four columns, in each of which was a different Greek version, namely, that of Symmachus, of Aquila, of the Seventy, and of Theodotion.

Tetuan; a town of Morocco, on the northern coast of Africa, thirty miles south-east of Tangiers; lon. 5° 27′ W.; lat. 35° 20′ N.; population, 14,000. It is about half a mile from the Mediterranean, inhabited by Moors (chiefly Andalusians) and Jews, who most of them speak Spanish. They are commercial, gentle in manners, and polite. The environs of this city are planted with vineyards and gardens, kept in good order, and the fruits here are better and more carefully nurtured than in the other parts of the empire. Tetuan was formerly the residence of the European consuls; but in 1770, an Englishman having killed a Moor, the reigning emperor declared that no European should again enter the town.

Tetzel, John, a notorious vender of indulgences, was born at Leipsic, where he studied theology, entered, in 1489, the order of the Dominicans, and received permission to go into the world and preach. In 1502, he was appointed by the Roman see a preacher of indulgences, and carried on, for fifteen years, a very lucrative trade in them, practising the most shameful delusions upon the people. His life was so corrupt that, at Innspruck, he was sentenced to be drowned in a sack for adultery. In consequence of powerful intercession, the sentence was mitigated to perpetual imprisonment. But being released also from this, he travelled to Rome, was absolved by pope Leo X, and even appointed apostolic commissary; and the archbishop of Mentz made him inquisitor. He now carried on the sale of indulgences with still greater effrontery, and travelled through Saxony in a wagon, provided with two large boxes, one of which contained the letters of indulgence, while the other was destined for the money obtained for them. The latter had the following inscription:—

Sobald das Geld im Kasten klingt,
Sobald die Seel gen Himmel springt.
When in the chest the money rings,
The soul straight up to heaven springs.

He is said to have had ninety gold guilders a month, besides his expenses. In many towns he was received with the ringing of bells, and every where levied large contributions, as he offered absolution for every crime, murder, perjury, adultery, not excepted. He carried on this infamous trade unchecked, until Luther came out, in 1517, with his theses against the crying abuse. These were answered by Tetzel; and the students of Wittenberg burned the answers in the market-place. Tetzel himself received a severe reprimand from the papal chamberlain, who was sent to settle the dispute. He died of the plague, in the Dominican convent at Leipsic. It is reported that Tetzel went so far as to give absolutions for crimes yet to be committed. It is well known that a great part of the money thus received was used for the erection of St. Peter's church at Rome.

Teucer; a king of Phrygia, son of the Scamander by Idæa. According to some authors, he was the first who introduced among his subjects the worship of Cybele, and the dances of the Corybantes. The country where he reigned was from him called *Teucria*, and his subjects *Teucri*. His daughter Batea married Dardanus, a Samothracian prince, who succeeded him in the government of Teucria.—2. A son of Telamon, king of Salamis, by Hesione, the daughter of Laomedon. He was one of Helen's suitors, and accordingly accompanied the Greeks to the Trojan war, where he signalized himself by his intrepidity. It is said that his father refused to receive him into his kingdom, because he had left the death of his brother Ajax unrevenged. This severity of the father did not dishearten the son: he left Salamis, and retired to Cyprus, where he built a town, which he called Salamis, after his native country. He attempted, to no purpose, to recover the island of Salamis, after his father's death. Some suppose that Teucer did not return to Cyprus, but went to settle in Spain, and thence into Galatia.

Teutoburg Forest; the place where Arminius defeated the Roman general Quinctilius Varus, in the year 9 A. D. (For information respecting this important battle, see *Arminius*, and *Varus*.) Though the ancients give the name of the Teutoburg forest to the battle-ground, and a wood in Lippe, near Paderborn, is still so called, it is not certain where the battle was actually fought, as the Romans probably comprehended under the name a more extensive tract than is at present understood by it. The most correct opinion is, perhaps, that which places it some leagues west of Pyrmont, at a place where remains of ancient walls, &c., have been found. The names of several spots, too, in that vicinity, have reference to the battle, as *Hermannsberg* (Arminius's mountain), *Varen*, or *Varusbusch* (Varus's grove), *Kriegsbusch* (War-grove), &c. There are fosses and redoubts, and two rows of graves, in which ashes, bones and arms are found, the latter having the appearance of German origin. There are many works relating to this point, among which we may mention that of W. Müller—*Vermuthungen über die Gegend, wo Hermann den Varus schlug* (Hanover, 1824, 4to., with a map).

Teutones; a warlike tribe, who, with the Cimbri (q. v.), Ambrones and Tugurini, migrated, 113 B. C., towards Italy. Whence they came is uncertain; most probably they were of the Germanic stock. After they and their allies had several times defeated the Romans, they were at length routed, 102 B. C., by Marius, near the site of Aix, in France.—For more information, see J. C. Pfister's *History of the Germans from original Sources* (1st vol. Hamburg, 1829, in German). See the following article.

Teutonic; that which belongs to the Teutones. (q. v.) Thus we say, "Teutonic tribes," and particularly "Teutonic stock of languages," by which all the languages of the Germanic family are meant. The name is not applied specially to the idiom of the Teutones, but is merely a scientific term, having reference to *Teut* (see *Tuiscon*) and *Teutschen*, or *Deutschen* (the name which the Germans give themselves), because *German* is now used more particularly of the modern German, and *Teutonic* suggests a time when the many languages, belonging to the same family, had not yet assumed the shape of distinct idioms. (See the article *Germany*, division *German Language*.) The languages now classed under the Germanic or Teutonic family or stock, are the following:—1. Northern languages, to which belong, *a*. the Scandinavian (q v.), with its divisions—the Swedish (comprising two dialects, those of Dalecarlia and Gothland), the Danish, and the dialects which are spoken in Norway and some of the Orkney islands (q. v.); and, *b*. the Icelandic: 2. German, which is divided into, *a*. the Franconian dialect, from which originated the Suabian (Alemannic) of the middle ages, the Upper German, and the (so called) Cimbrian; *b*. the Saxon or Sassic (to which belong the Anglo-Saxon, with its daughter, the English, q. v.), and the dialect spoken in Lower Scotland, similar, in many respects, to the parent stock (see *Scotland*); also the Lower Saxon (q. v.), or *Plattdeutsch*, and the Frisian and Dutch: 3. the Mœsogothic, in which the most ancient monument of the Germanic languages, the translation of the Bible by Ulphilas (q. v.), of the fourth century, is written. Others have divided the Germanic stock thus:—1. German branch, properly so called, embracing, *a.* Upper German; *b.* Lower German (the latter of which includes the Frisian, Netherlandish and Dutch, and Lower Saxon, or *Plattdeutsch*); *c.* Central German; *d.* High German: 2. Scandinavian branch, comprehending, *a.* Danish; *b.* Norwegian; *c.* Icelandic; *d.* Swedish: 3. English, under which fall the Anglo-Saxon and Scottish.—Respecting the mixture of the Germanic stock in most of the languages of Europe, see the part of the article *Germany* already referred to.

TEUTONIC ORDER. This religious order of knights was founded, in 1190, by Frederic, duke of Suabia, during a crusade in the Holy Land, at the time of the siege of Acre, and intended to be confined to Germans of noble rank; hence its name. The rule of the order was similar to that of the Templars. The original object of the association was to defend the Christian religion against the infidels, and to take care of the sick in the Holy Land. As the order was dedicated to the virgin Mary, the knights called themselves also *Brethren of the German house of our Lady of Jerusalem.* The dress of the members was black, with a white cloak, upon which was worn a black cross with a silver edging. The grand master lived at first at Jerusalem, but afterwards, when the Holy Land fell again under the power of the Turks, at Venice, and, from 1297, at Marburg. By degrees, the order made several conquests, and acquired great riches. At the beginning of the fifteenth century, it had reached the highest pitch of its power. Its territory extended from the Oder to the gulf of Finland, and its annual revenue was calculated at 800,000 marks. But it afterwards gradually declined, in consequence of its luxury and dissensions. In the year 1229, the Teutonic knights were called in by the Poles to aid them against the Prussians, who, also, after a war of fifty-three years, were forced to acknowledge the supremacy of the order, and to embrace the Christian religion. They also reduced the Sclavonian countries along the Baltic, particularly after their union (1237) with the Brethren of the Sword in Livonia. In 1309, the grand master fixed his seat at Marienburg, in Prussia. But the government of the order became so oppressive, that West Prussia submitted, in the fifteenth century, to Poland; and the order was obliged to hold East Prussia under the supremacy of Poland. The endeavor to acquire independence brought on a war with Poland, the result of which was, that the order lost also East Prussia, which, in 1525, was granted to the grand master, the margrave Albert of Brandenburg, as an hereditary duchy, under the sovereignty of Poland. Afterwards the head of the order, from 1527, had his seat at Mergentheim, in Suabia, at present part of the kingdom of Würtemberg, and became a spiritual prince of the empire. The eleven bailiwicks (provinces) were divided into commanderies, comprising together 850 square miles, containing 88,000 inhabitants. By the peace of Presburg, 1805, the emperor of Austria obtained the dignity, rights and revenue of grand master of the Teutonic order. In the war with Austria, 1809, Napoleon abolished this order, at Ratisbon, April 24. Its lands fell to the princes in whose territory they were situated. The archduke Anthony calls himself, at present, grand master of the Teutonic order in the empire of Austria.

TEVIOT, a river of Scotland, which rises in Mosspaul, on the borders of Dumfriesshire, passes by Hawick, and joins the Tweed at Kelso. The valley which it waters, comprising the most of Roxburghshire, is called *Teviotdale.*

TEWKSBURY; a town in England, in Gloucestershire, 104 miles west of London; lon. 2° 9′ W.; lat. 52° 2′ N.; population in 1821, 4962. It is situated at the conflux of the Severn and Avon, in a beautiful vale, and is a handsome town consisting mostly of three principal streets The houses are chiefly built of brick. The church called *Abbey church* is a noble pile of building, and one of the largest in England which is not collegiate or cathedral It contains many interesting monuments, and is the only remains of the celebrated monastery of Tewksbury, founded by the Saxons in 715. Tewksbury has been long noted for its mustard; but it is at present chiefly distinguished for its manufacture of stockings. It sends two members to parliament. Near this town was fought a bloody battle, between the parties of York and Lancaster, which put a final period to the power of the latter. The field on which it was fought, about half a mile from the town, is called *bloody meadow.* (See the articles *Edward IV*, and *Margaret of Anjou.*)

TEXAS; formerly a province attached to the viceroyalty of Mexico, now, with Cohahuila, forming a state in the Mexican confederacy. Its contiguity to the U. States, and its rapidly increasing population, consisting chiefly of Anglo-American emigrants, render it, although at present thinly peopled, and possessing little wealth, of great interest. The state of Cohahuila and Texas is, indeed, likely, at some future period, to be the most opulent, powerful and civilized in the Federation, from the advantages of a soil of surprising fertility, a great facility of internal communication by means of numerous rivers intersecting it, and a geographical position highly favoring its intercourse both with the U. States and the old world. It has a seacoast 350 miles long, affording, by means of its numerous rivers, intercourse, at a great number of points, with the gulf of Mexico. Although the mouths of these rivers seldom admit vessels drawing more than ten feet of water, the Red river has depth sufficient for ships of 400 tons. (See *Red River*, and *Mexico, Gulf of*.) It is separated from Louisiana by the Sabine river, on the east, and from Arkansas, on the north, by Red river: the extent and population we cannot give with precision. Most of the productions of tropical climates grow here in great perfection, and the cotton is equal to the finest produced within the U. States. The face of the country is generally level, and a great portion of it consists of immense prairies. The principal rivers are the Trinity, the Brassos (600 miles in length), and the Colorado (450 miles). The chief towns are Nacogdoches, with about 300 inhabitants, St. Antonio, on the Guadaloupe, with 1200 inhabitants, and Cohahuila. An attempt was made, in 1827, to erect Texas into an independent republic, by the name of *Fredonia;* but it was easily put down by a small Mexican force, and the Fredonians were driven out of the country. As slavery is abolished in Mexico, much difficulty has also arisen on this point, between the government and the Anglo-American colonists, who wished to retain their slaves.

Texel, or **Tessel**; an island of the province of North Holland, about eleven miles in length, and six in its greatest breadth; lon. 4° 40′ E.; lat. 53° 5′ N.; population, 5000. It is situated at the entrance of the Zuyder Zee, and separated from North Holland by the narrow channel of Mars-Diep. The soil is well fitted for sheep pasture, and it is noted for cheese. It has a capacious and good harbor, and a fort, which commands the entrance. Besides the petty town of the same name, it contains six villages. The land is fertile in pasture, and the whole well secured with dikes of prodigious strength and height. Near this island was the celebrated sea-fight between the fleet of Holland, under admiral Tromp, and that of England, under admiral Blake, in 1653, in which Tromp was killed. In 1673, a battle was fought between the fleet of Holland and the united fleets of England and France.

Th. (See *T*.)

Thaarup, Thomas, one of the most esteemed lyrical and dramatic poets of Denmark, was born at Copenhagen, in 1749, and died in 1821. Several of his productions have been translated into German.

Thaddeus, or **Jude**. (See *Judas*.)

Thais, the mistress of Alexander the Great, was a native of Athens. She is said to have instigated Alexander to set fire to Persepolis, the residence of the Persian kings, in revenge for the injuries done to her native city by Xerxes, and to have prompted him, when inflamed with drinking, to throw the first torch himself. She was afterwards the mistress, and finally became the wife, of Ptolemy, king of Egypt.

Thal; German for *valley* or *dale;* found in many geographical names, as *Schönthal* (Fair valley).

Thales, a native of Miletus, in Ionia, or, according to some, of Phœnicia, the earliest philosopher of Greece, and the founder of the Ionian school, was born about 640 B. C., and at first turned his attention to politics, but subsequently devoted himself to philosophical studies. His political career could not have been very distinguished, since Plato classes him among those sages who had little concern in public affairs. In his mature years, he is said to have made several visits to Egypt, where he calculated the heights of the pyramids, and received instruction from the priests. From them he probably acquired a knowledge of geometry, in which, however, his researches seem to have carried him beyond his teachers. After his return, his reputation for learning and wisdom became so great, that he was reckoned among the seven wise men, and his sayings were in the highest esteem among the ancients. To the Ionians he gave the wise counsel to form a general confederacy, for the purpose of resisting the Persian power, and to make Teos the seat of the union. He also dissuaded the Milesians from entering into an alliance with Crœsus against Cyrus. These are the only accounts concerning the political life of Thales, which have been preserved to us. According to the most commonly received opinion, he died about B. C. 548, while present at the Olympic games, exhausted by heat and the infirmities of age. His philosophical doctrines were taught orally, and preserved only by oral tradition, until some of the later Greek philosophers, particularly Aristotle, committed them to writing several hundred years after his death. He considered water, or rather fluidity, the element of all things, and that every natural object had its peculiar fluid principle, which contributed to its preservation. He taught that all natural phenomena are produced by the condensation and rarefaction of water, and are resolvable into this element. Earth is condensed water; air is rarefied water; and fire rarefied air. If water is the origin of all things, it must not be considered as dead matter, but as a life-giving principle, which he also called the *soul of the world*, or the *divine principle*. When he taught that the universe was pervaded by demons, or spirits, and assigned a soul to inanimate objects, he meant that this creative, moving, forming power, was necessarily diffused and at work throughout the universe, as an essential property of the original principle. This notion also served to connect his philosophical system with the popular religion; but he did not confound these demons, or powers, with the natural objects which they governed. The philosophical doctrines of Thales are, however, but imperfectly understood, on account of the want of written memorials. Among his maxims, or prudential sayings, is the celebrated Γνωθι σεαυτον (Know thyself). The accounts of his physical and astronomical knowledge are very contradictory. He is said to have first divided the year into 365 days. The story that he foretold an eclipse of the sun, although he may only have indicated the year of its occurrence, implies a more correct knowledge of the solar system than he and his disciples appear, from the statements of Plutarch and Diogenes Laertius, to have possessed; that is, supposing his prediction to have been founded on his own observations and calculation. It is, however, probable that he may have become acquainted with the approach of an eclipse during his residence in Egypt, or through his connexions with the Phœnicians, who were skilful astronomers, or may have learned some mechanical method of calculating it. At any rate, it is worthy of note, that the Ionic school first taught that the stars were merely material bodies, and not, according to the popular notion, divine beings.

THALIA; one of the nine Muses. She was venerated, by the country people, as the preserver of growing plants, and the inventress of agriculture and arboriculture. She was also the Muse of comedy, which had its origin in rural usages, and is usually represented with the comic mask (q. v.), and the shepherd's crook (*pedum*) in her hand. (See *Muses*.) One of the Graces was also called *Thalia*. (See *Graces*.) The name signifies, in the original Greek, *flourishing*, *blooming*.

THAMAS KOULI KHAN. (See *Nadir Shah*.)

THAMES (anciently *Tamesis*); a river of England, which takes its source in the Cotswold hills, and forms a stream near Lechlade, navigable for barges. The chief spring, or Thameshead, is about three miles from Cheltenham, whence it proceeds to Oxford, Dorchester, Henley, Windsor, Staines, Kingston, Richmond, Brentford, Hammersmith, Battersea, Westminster, London, Greenwich, Woolwich, Gravesend, Tilbury Fort, and at the Nore joins the Medway, and enters the sea. The tide runs as far up as Richmond, about seventy miles from the sea. Large ships of war can go up to Deptford; merchant ships of 700 or 800 tons, as far as the port at London. The canal navigation of the Thames, as well as the docks, and other great works connected with it, are very complicated and extensive. The length is 230 miles. (For an account of the docks, see *Docks*, and *London*, and for the Thames tunnel, the article *London*.)

THAMYRIS, or THAMYRAS; a celebrated Thracian poet, who flourished anterior to Homer. He obtained the prize for singing at the Pythian games, and he accompanied himself on the lyre. Plato sets him by the side of Orpheus, Olympus and Phemius, and asserts that no one ever equalled him in singing or in playing on the flute and lyre, and that, therefore, after his death, his soul took up its residence in the body of the nightingale. Strabo compares him to Musæus. There is a well-known fable of his having challenged the Muses to a contest in singing. The latter were victorious, and punished his audacity by depriving him of his sight, and of his musical talents, and breaking his lyre. (*Iliad*, II, 595.) He is represented as the inventor of the Dorian mode. None of his productions have come down to us.

THANE; the name of an ancient rank among the English or Anglo-Saxons. Skene makes the thane to have been equal in dignity to an earl's son. Camden says, the thanes were only dignified by the offices which they bore. Their origin is referred to Canute. (See *Sword.*) A freeman, not noble, was raised to the rank of a thane by acquiring a certain portion of land, by making three voyages at sea, or by receiving holy orders. (See the article *Great Britain*, division *Civil State.*)

Thanet, Isle of; a district of England, county of Kent, at the mouth of the Thames, separated from the main land by the river Stour on the south, and the Nethergong on the west. It extends about nine miles from east to west, and eight from north to south. The soil is dry; the air pure and bracing; and the prospect extensive, comprehending an expanse of rich and highly cultivated fields, and a delightful view of the ocean, varied with the shipping continually passing and repassing. The towns are Margate, Ramsgate and Broadstairs, all frequented for sea bathing.

Theano; wife of Metapontus, king of Icaria. She was barren, and, her husband being greatly desirous of having heirs, she presented him some supposititious children as her offspring. She afterwards actually became a mother; and when her own children had grown up, she persuaded them to attempt the lives of the others, while engaged in the chase. In the struggle, however, her own children were slain, and Theano died of despair.

Theatines; a religious order of regular priests, founded, in 1524, by St. Caietan of Thiene, and the bishop of Chieti (anciently *Theate*), who was afterwards pope Paul IV. They bound themselves, besides the usual monastic vows (q. v.), to preach against heretics, to take charge of the cure of souls, to attend the sick and criminals, and to trust entirely to Providence, owning no property, and not even collecting alms, but expecting the voluntary gifts of the charitable. Some of their churches and altars are sumptuous. In Italy, and particularly in Naples, the order is numerous and influential; and the bishops are chiefly taken from their number. In Spain and Poland, it has also flourished considerably; but it has not extended much in other countries. (See *Orders, Religious.*)

Theatre (from the *Greek*) signified, originally, that part of the play-house where the spectators sat, but was often applied to the whole building. Among the Greeks and Romans, play-houses were the chief public edifices next to the temples: they were not then used merely for the purpose of amusement, but the exhibitions which took place in them had, in part, a religious character. Being consecrated to Bacchus (Dionysus), they were often called *Dionysian*, or *Lenæan theatres*; the pieces were termed *Dionysiaca*, and the actors *Dionysic artists*. Every considerable Greek and Roman city had its theatre; but at first the dramas (q. v.), and the places where they were exhibited, were equally rude. A hut, formed without art from the boughs of trees (whence the name *scene*), was the stage, where, at the feasts of Bacchus, dithyrambics, in honor of the god, were sung to the assembled multitude. Thespis (q. v.) wandered about with a wagon, and upon this performed his rude plays. Susarion (562 B. C.) exhibited his satirical pieces upon a stage of boards; and gradually the genius of Greece produced those masterpieces of architecture whose remains we still admire. The Romans, their imitators, surpassed them in the magnificence and size of their edifices. The first stone theatres were built in the Grecian colonies, in Etruria and Lower Italy; and at Adria, an Etruscan colony, the remains of a theatre are found, which is the oldest known. There were, likewise, stone theatres in Sicily sooner than in Greece; yet, in the seventieth Olympiad (500 B. C.), the theatre at Athens was of wood; but, as it fell down during the performance of a piece of Pratinas, on account of the immense multitude assembled, a building of stone was begun in the time of Themistocles, which was the first of the kind in Greece, was called the *theatre of Bacchus*, and afterwards served as a model for all the others. The common form of the theatre was a semicircle; that of the amphitheatre an ellipse. The Romans, likewise, for a long time, had only wooden buildings for their scenic representations. These, after the conclusion of the performance for which they were erected, were taken down: there was merely a stage for the players; the spectators were obliged to stand. Marcus Æmilius Lepidus (died 13 B. C.) first built a theatre with seats for the spectators. Soon after, the theatres of Scaurus and Curio were erected, which were distinguished for their size and splendor, but were of wood, and, after the plays were over, were taken down. The theatre of Marcus Æmilius Scaurus, a contemporary of Cicero and Cæsar, was exceedingly magnificent, and so large that it would contain 80,000 persons. The building was adorned with

360 columns, placed in three rows, one over the other: the lower row, 38 feet high, was of marble, and ornamented with 3000 statues; the second row was of glass; the third of wood, gilt. The theatre of Curio was movable, and was converted from two theatres into an amphitheatre. Pompey was the first who erected a stone theatre in Rome, the remains of which now compose the palace Ursini. It was built after the plan of the theatre of Mitylene, and was finished under Caligula. It held 40,000 persons. After the erection of this, stone theatres were built, not merely in Rome, but also in other cities of the Roman government. From this time, also, the stages were covered with marble, and surrounded with marble columns. At Nero's command they were covered with gold; and as the whole of the theatre, and all that was put upon the stage, was gilt, or adorned with gold, the day in which this happened was called the *golden*. Behind the stage, in the Roman theatres, which, as is well known, had no roof, a covered colonnade was erected, for the shelter of spectators in bad weather. This was also the case in the theatre of Pompey, which enclosed a place filled with trees and ornamented with fountains and statues. Some time after the Punic war, Quintus Catulus introduced into Rome, from Campania, the custom of covering the theatre and the orchestra with a cloth, to protect the persons present from the weather. The cloth used was commonly dyed with purple and other rich colors. In later times, the finest and most costly linen was employed; and Nero even appropriated to that purpose a carpet, adorned with gold, in the middle of which his image was wrought, surrounded with stars, guiding the chariot of the sun. In order to lessen the heat caused by such a mass of spectators in such covered theatres, very expensive means were resorted to. Pompey caused the passages, and the steps leading to the seats, to be moistened with water. Afterwards, a mixture of wine and water was used, in which was steeped the best Cilician saffron, in order to produce an agreeable perfume. This was conducted through pipes, concealed in the walls of the theatre, and was raised by pressure to the highest seats. There the pipes had very small openings, through which the liquid issued in a fine rain, and diffused coolness through the whole theatre. There was likewise sometimes a balsam mixed with the wine; and frequently the statues, with which the theatre was ornamented, were employed in sprinkling it, they being made hollow and the wine carried through them in pipes. The theatres were built, whenever it was possible, upon the declivity of a hill, in order to be able, conveniently, to place the seats for the spectators, like steps, one above another. If the place was level, it was necessary, of course, to support the raised seats artificially. This was less frequently done in the Greek theatres than in the Roman. The form of the building was a semicircle, the ends of which were somewhat prolonged, and were connected by a straight part. It had three principal parts: 1st, the theatre, properly so called, that is, the place for the spectators, in the semicircle; 2d, the scene, or the place for the players, in the straight part; 3d, the orchestra, the place extending from the stage to the seats of the spectators. In these respects the Greek and Roman theatres were essentially alike. But they differed considerably in other particulars. (See *Orchestra*, and *Proscenium*.) To the machinery, especially the Greek, belongs, 1st, the machine, particularly so called, at the left entrance over the stage, in order to represent, in tragedy, the gods and heroes hovering in the air; 2d, the theologeion, over the stage, for representing the gods in Olympus; 3d, the crane, which was let down in order to raise a person quickly from the stage; 4th, the hanging cords, to support the gods and heroes hovering in the air. Other machines were placed under the stage; as, for instance, one to elevate it. Besides the theatres already named, the principal ones of antiquity were those at Segestus, Syracuse and Agyrium. The beautiful theatres at Corinth and Sparta (of which there are still remains), and at Epidaurus and Megalopolis, upon the island of Ægina, were probably the most magnificent in Greece. Of that at Epidaurus, extensive ruins are still to be seen. Of the ancient theatres in the Italian cities, we mention only those discovered in modern times at Herculaneum and Pompeii, and those at Iguvium in Umbria, at Antioch and Pola. In Rome, the most remarkable, besides the theatre of Pompey, were the theatre of Cornelius Balbus, and that of Marcellus, which could contain 22,000 men. In the interior, as well as the exterior, the theatres of the present day differ essentially from the Greek and Roman.—The early theatrical representations in Germany took place either in the open air, or in buildings not specially appropriated to this pur-

pose. The finest of the present theatres in Germany are that at Munich, the new one at Berlin, the theatre on the Wien, in Vienna, those at Carlsruhe and Darmstadt; in France, the *théâtre Français*, and that at Bordeaux. (See *Paris Theatres.*) In Italy, the largest are that in Naples (San Carlo), in Milan (the *Scala*) and that of Turin. The term *theatre* is also given to buildings for the delivery of anatomical lectures, accompanied with dissections; also to the body of pieces, in any language, written for representation; thus we say, the *French theatre*, the *English theatre*, &c.

Thebaid, or **Thebais**. (See *Statius.*)

Thebes; an ancient city, and capital of Egypt, in the Thebaid, or Upper Egypt, on both sides of the Nile, about 260 miles south of Cairo. Thebes is famous as "the city of a hundred gates," the theme and admiration of ancient poets and historians, the wonder of travellers—"that venerable city," in the language of doctor Pocock, "the date of whose destruction is older than the foundation of other cities, and the extent of whose ruins, and the immensity of whose colossal fragments, still offer so many astonishing objects, that one is riveted to the spot, unable to decide whither to direct the step or fix the attention." These ruins extend about eight miles along the Nile, from each bank to the sides of the enclosing mountains, and describe a circuit of twenty-seven miles. The most remarkable objects on the eastern side are the temples of Carnac and Luxor; and on the western side are the Memnonium, or palace of Memnon, two colossal statues, the sepulchres of the kings, and the temple of Medinet Abu. The glory of Thebes belongs to a period prior to the commencement of authentic history. It is recorded only in the dim lights of poetry and tradition, which might be suspected of fable, did not such mighty witnesses remain to their truth. At the time of the Persian invasion, Memphis had supplanted Thebes; and the Ptolemies afterwards removed the seat of empire to Alexandria. Strabo and Diodorus described Thebes under the name of *Diospolis*, and gave such magnificent descriptions of its monuments as caused the fidelity of those writers to be called in question, till the observations of modern travellers proved their accounts to have fallen short of the reality. At present, its site presents only a few scattered villages, consisting of miserable cottages, built in the courts of the temples. The ancient structures, however, remain in a state of wonderful preservation. Almost the whole extent of eight miles along the river is covered with magnificent portals, obelisks, decorated with the most beautiful sculpture, forests of columns, and long avenues of colossal statues. The largest of these temples, and of any in Egypt, is that at Carnac, on the site of the ancient Diospolis. Diodorus describes it as thirteen stadia (about one and a half mile) in circumference, which nearly agrees with the observation of Denon. It has twelve principal entrances; and the body of the temple, which is preceded by a large court, consists of a prodigious hall or portico, the roof of which is supported by one hundred thirty-four columns, some twenty-six, others thirty-four feet in circumference: four beautiful obelisks then mark the entrance to the shrine, which consists of three apartments, built entirely of granite. About one and a fourth mile above Carnac is the village and temple of Luxor. This temple, though not of such vast dimensions as that of Carnac, is in a superior style of architecture, and in more complete preservation. The entrance is thought to surpass every thing else that Egypt presents. In front are the two finest obelisks in the world, formed of rose-colored granite, and rising, as Denon supposes, after allowing for the portion buried in the ground, to the height of 100 feet. But the object which most attracts attention consists in the sculptures which cover the east wing of the northern front. They contain, on a great scale, a representation of a victory, gained by one of the ancient kings of Egypt over their Asiatic enemies. The number of human figures introduced amounts to 1500, 500 on foot and 1000 in chariots. The Memnonium (see *Memnon*), and the temple of Medinet Abu, are objects of great interest, both for the grandeur of their architecture and the richness and variety of their sculptures. The tomb of Osymandyas, the temple of Isis, the labyrinth, and the catacombs, also lie on the western side of the Nile. In the interior of the mountains which rise behind these monuments are found objects less magnificent and imposing indeed, but not less interesting—the tombs of the kings of Thebes. Several of these were opened by Belzoni, and were found in a state of great preservation, with mummies in the sarcophagi, as well as dispersed through the chambers. The colossal statues have excited great admiration. The largest has been broken off at the waist, and the upper part laid prostrate on the back. It measures six feet and ten inches over the front, and sixty-two feet round the shoulders. Two other colossal statues, about fifty feet high, are seated on the plain. Champollion (*Précis du Système Hiéroglyphique*) has deciphered many of the inscriptions on these ruins. That the magnificent ruins of Carnac, Luxor and Medinet Abu are the remains of the hundred-gated Thebes, the earliest capital of the world, cannot be doubted. According to the measurement made by the French, the distance of these ruins from the sea on the north amounts to 680,000 metres (850 miles), and from Elephantine on the south to 180,000 metres (225 miles), corresponding exactly with the 6800 and 1800 stadia of Herodotus (ii, 9). Without including the Hippodrome and Medamud (an Arab village), the circumference of the ruins is about 15,000 metres, agreeing with the 140 stadia (17½ miles) mentioned by Diodorus (i, 45) as the circumference of Thebes. The origin of the name of this celebrated city, as well as the date of the foundation, is unknown. *Thebæ* of the Greeks is, perhaps, derived from the Egyptian *Thbaki* (the city); and the *No-Ammon* of the Hebrews, and *Diospolis* of the Greeks, are mere translations of the Egyptian *Thbaki-antepi-Amoun* (city of the Most High).—See Champollion, *Egypte sous les Pharaons*, i, 218; and the great work of the French government, *Description de l'Egypte* (12 vols., folio, 25, 8vo.).

Thebes (Θηβαι); the capital of Bœotia, and one of the most celebrated cities of Greece, the birth-place of Pindar, Epaminondas and Pelopidas. It was situated on an elevated level, on which were the sources of the Dirce and Ismenus. Cadmus, leading thither a Phœnician colony, is said to have founded the city by building the citadel called *Cadmea* (B. C. 1500). Amphion built the city around it, and enclosed it with a wall, having seven gates, which he called from the names of his seven daughters by Niobe. The circuit of the city is said to have been almost seventy stadia. The environs were adorned with meadows and gardens. To the east was the celebrated fountain Œdipodia, in which Œdipus purified himself after the murder of his father. The city, once the first in Greece, contained many splendid temples and public buildings, with numerous statues. In the time of Pausanias (viii, 33, 1), with the exception of the citadel and the few houses contained in it, it was merely a heap of ruins. The Theban government was at first monarchical, and three dynasties successively occupied the throne: 1. the Cadmeans, the descendants of Cadmus, till Antesion; 2. the three Sparti, Amphion and Zethus, during the minority of Laius, and Creon between Laius and Œdipus; 3. the Bœotians, or last kings. The sons of Œdipus, Eteocles (q. v.) and Polynices, fell in single combat, each by the hand of the other, after the latter had called in the Argives to his assistance. Laodamas, son of Eteocles, next ascended the throne, during whose minority his great uncle Creon acted as regent. The Argives, who still continued the war, were all slain except Adrastus, at whose suit Theseus marched against Creon, slew him, and compelled the Thebans to suffer the burial of the Argives, which they had hitherto prevented. The sons or grandsons (Epigoni) of the slaughtered princes, ten years later, revenged the death of their ancestors. The war called the "expedition of the seven against Thebes," and the war of the Epigoni, are celebrated in the early Grecian annals. Led by Alcmæon and Thersander, the Epigoni (q. v.) conquered and destroyed Thebes (about 1215 B. C.), and put to death, or drove out, Laodamas. When Xanthus, the last king of the Thebans, fell in single combat with Melanthus, king of Athens, a democratical form of government was substituted for the monarchical in Thebes (about 1126 B. C.) Thebes now aspired, in rivalry with Athens and Sparta, to obtain the supremacy in Greece. But the inactivity of the Thebans, and their perfidious leagues with the Persians, obstructed the growth of their power. Their Bœotian towns fell off, and an alliance with Sparta, concluded with the design of recovering their former ascendency in Bœotia, proved ineffectual. Athens took the Bœotians under her protection, and Thebes lost her dominion over Bœotia, which now became subject to the Athenians. In the Peloponnesian war, the Thebans rendered the most important services to the Spartans; and they were successful in several subsequent wars against Athens and Sparta. But Phœbidas, the Spartan commander, finally possessed himself of the Cadmea, and the aristocratical party in Thebes gained the upper hand. All sorts of oppression and injustice were committed, until Pelopidas and Epaminondas headed a conspiracy which put an end to the tyranny by the death of the tyrants (B. C. 378). Those two chiefs were therefore named Bœotarchs amid the acclamations of the people. The Spartan Cleombrotus invaded Bœotia for the purpose of punishing the authors of this revolution; and Athens, although it had favored the conspiracy, abandoned the Thebans; but Pelopidas, to excite the Athenians against Sparta, instigated Sphodrias, who had been left in command of the Spartan forces by Cleombrotus, to attack the Athenian port Piræus. He was repulsed, and Athens immediately declared war against Sparta. The allies now gained several victories; but Athens finally concluded a peace with the Lacedæmonians, under the mediation of Persia. Thebes, nevertheless, continued the war, to preserve Bœotia, and gained those brilliant victories under Epaminondas and Pelopidas, which suddenly raised her above all the Grecian states. Nearly all of the Peloponnesians took part against Sparta, and formed alliances with Thebes. The Persians and Athenians now joined the Lacedæmonians, but were unable to effect much; and the war continued with almost uninterrupted success on the side of the Thebans till the battle of Mantinea (B. C. 363), in which Epaminondas fell. A general peace was then negotiated by the mediation of Artaxerxes, in which each party was left in possession of its own territory. Thebes, although for some time still formidable, now began to decline. In the sacred war (so called because it was undertaken on account of the alleged encroachments of the Phocensians on the possessions of the Delphic temple, and during which they stormed and plundered the temple), in which all the Grecian states finally became involved, Thebes took part against Phocis (354 B. C.), and subsequently entered into an alliance with the Athenians, and other Greeks, against Philip of Macedon. After the battle of Cheronæa, it was obliged to receive a Macedonian garrison, and recall the exiles. After Philip's death, an insurrection broke out in Thebes, and an attempt was made to drive the Macedonians from the Cadmea. But Alexander hastened to their relief, captured and destroyed (B. C. 335) the city, and reduced the inhabitants to slavery. Twenty years afterwards, Cassander rebuilt Thebes; but it never recovered its former importance. In the war of the Romans against Mithridates, king of Pontus, it joined the latter out of gratitude to Athens, and was severely chastised by the Romans. From this time, the Thebans disappear more and more from history. In its most flourishing period, Thebes was a very populous city. The inhabitants, like those of Athens, were divided into three classes—citizens, strangers and slaves. The city was, in a certain degree, the head of Bœotia, and was the leading power in a confederacy composed of several Bœotian cities. Public affairs were discussed by the four councils of the four districts into which Bœotia was divided, and which, together, chose eleven Bœotarchs, and decided in a general council composed of delegates from each town. The latter assembly convened at Thebes. The city had its own senate: the command, in war, and the administration of justice, were intrusted to the Bœotarchs and polemarchs, who were chosen annually. Merchants and mechanics could become citizens, but could not hold office. Children who could not be supported by their parents were not, as in other Grecian cities, exposed, but sold to some wealthy citizen as slaves. The Bœotian cities often attempted to dissolve their connexion with Thebes, and render themselves independent, but rarely with success.

Theft. (See *Larceny.*)

Theism. (See *Deism.*)

Thellusson, Peter; a native of Geneva, descended from an ancient family of French Protestants, who settled as a merchant in London, and acquired an immense fortune. He died at his seat at Plastow, in Kent, July 21, 1797. The testamentary disposition which he made of his property was not a little extraordinary. To his widow and children (three sons and three daughters) he bequeathed about £100,000, and the remainder, amounting to more than £600,000, he left to trustees, to accumulate during the lives of his three sons, and the lives of their sons; then the estates directed to be purchased with the produce of the accumulating fund, to be conveyed to the eldest male descendant of his three sons, with benefit of survivorship. This singular will, being contested by the heirs at law, was finally established by a decision of the house of lords, June 25, 1805. It, however, occasioned the passing of the act of parliament of the 39th and 40th of George III, cap. 98, restraining the power of devising property, for the purpose of accumulation, to twenty-one years after the death of the testator. In case there should be no such heir as the devisee described in the will, the accumulated property is to be added to the sinking fund.

Theme, in music, is a series of notes which is taken as the text of a new composition.

Themis, goddess of order among the Greeks, was the daughter of Cœlus and

Terra (Heaven and Earth); according to some, of Helios, or the Sun. Jupiter was inflamed by her charms; and, although she for a long time avoided his embraces, her footsteps finally betrayed her near Ichnæ, in Macedonia, and she became the wife of the god of gods. She bore him the Hours and the Fates (Parcæ); and her daughter Dice (see *Hours*), the goddess of justice, is often confounded with her. According to Homer, she dwelt in Olympus, and attended to the just distribution of food at meals, and to every thing relating to the preservation of order. Orpheus (Hymn lxxviii) sings of her: the black-eyed goddess first presided over the Delphic oracle, and delivered oracles to the gods: she taught Apollo right and justice: she instructed mortals in the holy rites of Bacchus: from her come all the mysteries and divine worship. It was Themis who warned Jupiter and Neptune not to marry Thetis. According to Homer, she sits by the side of Jupiter, and converses with him.

Themisto. (See *Athamas.*)

Themistocles, a Grecian commander, was born at Athens (B. C. 514), and early displayed a remarkable energy of mind. He paid little regard to morals and to the fine arts, which formed the chief objects of attention in the education of the Athenians, but eagerly studied the political sciences. Love of glory was his ruling passion. After the victory at Marathon, he was observed to be peculiarly thoughtful; and, on being asked the reason, he replied, "The trophies of Miltiades will not let me sleep." His conduct was marked by many extravagances and excesses; and, in order to acquire notoriety, he exhibited public spectacles, and exceeded his means in his expenditures. The Athenians were at that time divided into two parties, the aristocratical and the democratical. Themistocles courted the favor of the latter, while Aristides (q. v.) was connected with the former. His suppleness, and his ability in the administration of public affairs, soon gained him great reputation; but his fame was less pure than that of Aristides, and his patriotism was weaker than his ambition. Although the Persians had been repulsed by their defeat at Marathon, Themistocles foresaw that they would, nevertheless, renew the war; and he prevailed upon the Athenians to apply the product of their silver mines, which had previously been distributed among the citizens, to the augmentation of their navy. During the exile of Aristides, Themistocles enjoyed the greatest influence in Athens. Three years afterwards, Xerxes renewed the preparations for the subjugation of Greece, and summoned the Greeks to submit to him. According to Plutarch, Themistocles instigated the Athenians to put to death the Grecian interpreter who bore this message; but, according to Herodotus, it was at the time of the first Persian invasion, that an act of this kind was committed. Themistocles exhorted the Greeks to forget their domestic divisions, and to unite in opposition to the common enemy. He prevailed upon Epicydes, whose nomination to the post of commander-in-chief had been procured by intrigue, to resign that place for a sum of money, and obtained his own appointment to the command. His advice to occupy the pass of Thermopylæ (see *Thermopylæ*, and *Leonidas*) was, however, neglected, and Bœotia was soon entirely overrun by the enemy, who immediately began to advance upon Athens. In this emergency, Themistocles, supported by the reply of the Delphic oracle, which had been consulted at his suggestion, proposed that the Athenians should convey their women and children to places of security, abandon their city to the Persians, and that all who were capable of bearing arms should take to their ships. This proposition was acceded to, and all the exiles, among whom was Aristides, were recalled. The latter now gave his support to his former rival. The command of the allied fleet, though consisting chiefly of Athenian ships, was intrusted to Eurybiades, a Spartan. The latter, rendered insolent by his elevation, threatened to strike Themistocles, in consequence of some expression which fell from him, while consulting concerning the plan of operations: "Strike, but hear," replied Themistocles, calmly; and Eurybiades listened to his arguments, and adopted his proposition. The consequence of this measure was the battle of Salamis (B. C. 480), in which the Persian fleet was almost totally destroyed, and Greece was saved. The chief glory of this victory is due to Themistocles, who, before and during the battle, displayed not less valor than prudence and genius for command. He now advised the allies to sail to the Hellespont, and destroy the bridge of boats which Xerxes had constructed there, in order to intercept the retreat of the Persians. His advice was not followed, from fear of the consequences of driving an enemy, still formidable by his numbers, to despair. Themistocles, however, sent word to Xerxes that the Greeks meditated the destruction of the bridge, and thus hastened his retreat out of Greece. Artifice and cunning, which now too often displayed themselves in acts of injustice, were leading traits in his character. While he besieged Andros, he extorted contributions of money from the neighboring islands, by threats of invasion, and applied it to his own purposes. Another time, while he lay with a fleet at Pegasa, in Magnesia, he announced to the Athenians that he had a proposition to make to them, the execution of which would be highly advantageous to the state, but that he could not deliver it in public. Aristides was therefore sent to receive it in private. He declared to the citizens that the project of Themistocles was in the highest degree advantageous, but was equally unjust; and it was therefore voted not to adopt it. The plan of Themistocles was to burn all the ships of the fleet except those of the Athenians, and thus to give Athens the dominion of the sea. The victory of Salamis had raised the fame of Themistocles throughout all Greece to the highest pitch; and his services were acknowledged and rewarded, not only by his native city, but by the other states. After Athens was rebuilt, Themistocles proposed that all the citizens should be admitted to participate in the government, and that the archons should be chosen from the whole body of the people without distinction. This proposition was adopted; but his plan of fortifying Athens, so as to render it secure against surprise, although received with favor by the Athenians, aroused the jealousy of the Lacedæmonians. They accordingly opposed the design, under the pretext that, if it should again fall into the hands of the Persians, it would serve as a strong-hold from which they would be able to conquer all the other Grecian states. Themistocles was sent to Sparta to conduct the negotiations on this matter. By various delays and artful evasions, he contrived to protract the final decision so long, that the Athenians were enabled, by great exertions, to complete their walls before the Spartans were aware of it. He then broke off the negotiations, and maintained that whatever was advantageous to one's country was just. It was by his influence, also, that the Piræus, the principal port of Athens, was constructed, and connected with the city by the Long Walls. While Themistocles was thus acquiring the gratitude of his country, he drew upon himself the hatred of the Spartans, not only on account of the deception which he had practised upon them, but also by his obstructing their project to place themselves at the head of the Grecian states. They had proposed that all of those states which had not taken part in the Persian war should be excluded from the Amphictyonic council. Themistocles perceived that this measure, by excluding Thebes, Argos, and other powerful cities, from the Grecian confederacy, would give Sparta the ascendency. He succeeded in preventing its adoption; and the Lacedæmonians therefore leagued themselves with his enemies in Athens, to effect his overthrow. His own manners were by no means calculated to conciliate his enemies, and he was banished from Athens (B. C. 471) by the ostracism. While in exile at Argos, Pausanias, the Spartan, communicated to him a plot against the freedom of Greece, in the hope that Themistocles, under existing circumstances, would be induced to favor it. But he rejected the proposition, without, however, betraying Pausanias, after whose death the letters of Themistocles were found, which proved that the subject had been discussed between them. The Lacedæmonians accordingly accused him to the Athenians of being an accomplice in the conspiracy; and he was summoned by the latter to answer for his conduct in presence of the Grecian states. Fearing the result of such an investigation, Themistocles retired to Corcyra, to the inhabitants of which he had rendered important services. Not feeling secure here, he withdrew to Epirus, and afterwards sought the protection of Admetus, king of the Molossians, whom he had formerly offended. To assure himself a friendly reception, he seized an opportunity to throw himself upon his knees before the household gods of Admetus, with the king's son in his arms. But the vengeance of the Spartans pursued him even here. They threatened to make war upon Admetus, if he should continue to protect the traitor, as they termed Themistocles. Admetus therefore supplied him with money, and sent him to a port on the Ægean sea, whence, after several adventures, he reached Asia in safety, and finally arrived at the Persian court. A price of 200 talents had been set on his head by the king Artaxerxes Longimanus; but he procured access to Artaxerxes, and received himself the 200 talents which had been offered for his head, with the promise of greater rewards, in case he would give information concerning the state of Greece. The discourse which he is said to have addressed to the king on this occasion, and the letter to Artaxerxes, which is attributed to him, are undoubtedly spurious. He asked for time to learn the Persian language; and, in the space of a year, he was able to appear at the royal court like a native. His address and talents gained him the favor of Artaxerxes, and he was treated with the greatest distinction. The close of his life is enveloped in obscurity. Plutarch relates that, an insurrection having been excited in Egypt against the Persian government, by the intrigues of the Athenians, Artaxerxes prepared to send an army against Greece, and called upon Themistocles to fulfil his previous promises of assistance; and that, to avoid bearing arms against his country, Themistocles, after having sacrificed to the gods, and bade his friends farewell, took poison at Magnêsia (B. C. 449), in the sixty-fifth year of his age. Thucydides merely says that he died of a disease. Plutarch and Cornelius Nepos have each left us a life of him. The twenty-one letters which are ascribed to him (edited by Schötten, 1710, and by Bremer, 1776) are proved by Bentley, in his Dissertation on the Letters of Phalaris, to be spurious.

Thénard, Louis Jacques, a celebrated chemist, was born in 1777, at Louptière, near Nogent sur Seine. He early applied himself sedulously to the study of chemistry, and to making experiments, and, at the age of twenty, was chemical teacher in the principal public laboratories of Paris, and at the polytechnic school. He also contributed to various scientific journals, and, by that means, widely extended his reputation. When he was twenty-six, he was made professor of chemistry in the college of France, and, not long after, was received into the institute, in the place of Fourcroy. He is particularly distinguished for his skill and ingenuity in conducting experiments. His works are *Recherches physico-chimiques* (2 vols., 1816), and *Traité élémentaire, théorique et pratique* (4 vols., 1818; 5th ed., 1827, 6 vols.). He is also author of numerous treatises in the *Annales de Chimie*, and in the Transactions of the Society of Arcueil, and is likewise one of the editors of the *Journal de Physique*. At the time of the coronation of Charles X, he was created baron.

Theobald, Louis, a miscellaneous writer, was the author of various works, critical, poetical and dramatic, but merits remembrance only as a commentator on Shakspeare, being the first who properly referred to the books and learning of that great dramatist's time. After publishing, in 1726, a work entitled Shakspeare Restored, he gave an edition of that author, which immediately followed the publication of that of Pope, from whom, although in correspondence with him, he concealed his design; hence his place as the hero of the Dunciad. Besides twenty dramatic pieces written by himself, he produced on the stage, in 1720, a tragedy entitled the Double Falsehood, which he attributed to Shakspeare, but which, in the opinion of doctor Farmer, belongs to Shirley. He died in 1744.

Theocracy (from θεος, God, and κρατος, power) is that government of which the chief is, or is believed to be, God himself, and the laws the commandments of God. The priests, in such a government, are the promulgators and expounders of the divine commands, the representatives of the invisible Ruler, who, however, can also call other persons to this dignity. (See *Hebrews*, and *Moses*.) In early periods, in which belief predominates over the spirit of investigation, theocracy will often enjoy more authority than other forms of government. The human and divine are yet mixed, and the law is considered as sent from above.

Theocritus, the chief of pastoral poets, was born at Syracuse, and flourished about B. C. 280. Having gone to Egypt, he was treated with much distinction by Ptolemy Lagus and Ptolemy Philadelphus, but afterwards returned to Syracuse, where he is said to have been put to death by Hiero II, on account of some offensive expressions. We have under his name thirty idyls, or pastoral poems, of which, however, several are probably by other authors. Although he is one of the oldest idyllic poets whose works are known to us, he is not to be considered the first who wrote in this manner, which originated, and was carried to perfection, in Sicily. Most of his idyls have a dramatic form, and consist of the alternate responses of musical shepherds. Writing in the Doric dialect, which is peculiarly adapted to the simplicity of rural life, his language is strong and harmonious. The best editions of his works (which are usually joined with those of Moschus and Bion) are Reiske's (Leipsic, 1765), Warton's (Oxford, 1770, 2 vols., 4to.), Valkenaer's (Leyden, 1773, 1779, 1781 or 1810), Kiessling's (Leipsic, 1819), Scheefer's (1809—1812). Elton's Specimens of the Classic Poets (3 vols., 8vo., 1814) contains translations from Theocritus in English verse.

Theodicæa (from Θεος, God, and δικαιοω, I acknowledge as right, vindicate); a vindication of the Deity in respect to the organization of the world, and the freedom of the human will. The word is not happy, as God does not need a defence: a theodicæa is rather a defence of theism against atheism, which Leibnitz first undertook on a broad scale, by publishing, in French, in 1710, his *Essai de Theodicée* (Essay towards a Theodicæa), respecting the Goodness of God, the Liberty of Man, and the Origin of the Bible. In this work Leibnitz maintained the notion that God had chosen, among all possible worlds, the most perfect. This was called *optimism* (q. v.), and gave rise to much discussion until the second half of the eighteenth century. Voltaire attacked it with the weapons of wit in his *Candide*. Plato, St. Augustine, Thomas Aquinas, and, among later writers, particularly Campanella, have attempted to reconcile human liberty and evil with the power and holiness of God. J. J. Wagner has published a new Theodicæa (Bamberg, 1809). Every theodicæa must lead to teleology. (q. v.)

Theodolite. This instrument serves to measure angles between heavenly bodies, as well as objects on the earth, with great accuracy. The theodolite consists of two concentric horizontal circles, the inner of which has, at the ends of one of its diameters, two perpendicular columns, on which rests the horizontal axis of a small meridian telescope. The vernier (q. v.) of the inner circle is made fast to an arbitrary division line of the outer one, and both circles are moved together with the telescope, until the object sought for appears in its field. The outer circle is now fixed, and the inner one is turned round, until the telescope strikes the second object, whose angular distance from the first is to be measured. The inner circle is now fastened to the outer, and, by means of the micrometer screw, the thread of the telescope is brought exactly upon the object. The arc which the vernier of the inner circle has described on the outer one, now measures the angle which the two objects make at the common centre of the two circles. Of late, several improvements have been made in this instrument.

Theodora; empress of the East, the wife of Justinian, famous for her beauty, intrigues, ambition, and talents. Her father was the keeper of the beasts for public spectacles at Constantinople, and she herself was a dancer at the theatre, and a courtesan notorious for her contempt of decency, before her elevation to the throne. Justinian saw her on the stage, and made her his mistress during the reign of his uncle Justin, whose consent he at length obtained for his marriage with Theodora; and a Roman law, which prohibited the marriage of the great officers of the empire with actresses, was repealed in her favor. She was crowned with Justinian in 527; and the death of Justin shortly after left her in possession of sovereign authority, through the blind partiality and weakness of her imperial consort. She made use of the power she had attained to raise from obscurity her friends and favorites, and to avenge herself on her enemies. According to Procopius, she continued to indulge herself in the most degrading sensuality after she became empress; and if the disgusting detail which he gives of her crimes is to be believed, seldom, indeed, has a brothel been disgraced by scenes of more infamous profligacy than those exhibited in the palace of Theodora. With all her faults, however, this woman displayed courage and presence of mind in circumstances of difficulty and danger; for in the alarming sedition at Constantinople, in 532, her counsels animated Justinian, and induced him to forego his inglorious design of fleeing before the rebels, who were subsequently reduced to subjection by Belisarius. Theodora died of a cancer, in 548, much regretted by her husband. (See Gibbon's *Decline and Fall*, ch. xl.)

Theodore, king of Corsica. (See *Neuhof*.)

Theodoric, king of the Ostrogoths, surnamed the Great, descended of the royal Gothic race of the Amali, was born near Vienna, in the year 455. His father, Theodomir, was one of the three brothers who jointly ruled the Ostrogoths settled in Pannonia; and he sent him, when only eight years of age, to Constantinople as a hostage, to secure the conditions of a treaty between the Goths and the emperor Leo. After residing two years with that emperor, he was restored to his father, then sole monarch of the Ostrogoths, under whom he gave various indications of his warlike spirit and ability for command. On the death of Theodomir, in 475, he succeeded to the crown, and commenced a course which, after menacing the safety of the Greek empire, and Constantinople itself, terminated in an expedition against Odoacer, who had assumed the title of king of Italy. After several bloody engagements, the latter was finally induced to yield, on condition that he and Theodoric should govern Italy with equal authority. The murder of Odoacer at a banquet soon followed this agreement; on which Theodoric caused himself to be proclaimed king of Italy—a title that the emperor Anastasius was reluctantly obliged to sanction. However indefensibly he acquired dominion, he governed with extraordinary vigor and ability. He attached his soldiers by assigning them a third part of the lands of Italy, on the tenure of military service; while, among his Italian subjects, he encouraged industry and the arts of peace. He even improved the administration of justice, and, though a Goth, was so far from delighting in the destruction of public monuments, that he issued edicts to protect them at Rome and elsewhere, and assigned revenues for the repair of the public edifices. Able in peace, and victorious in war, he maintained the balance of the West until it was overthrown by the ambition of Clovis, who slew Alaric, the Visigoth king, the remains of whose family and property were saved by Theodoric, who also checked the victorious Franks in their further career. Like his ancestors, he was an Arian, but was indifferent to controversy, and never violated the peace or privileges of the Catholic church. The particulars of the government of this memorable prince, who shed a short-lived lustre on the Gothic name, are recorded in twelve books, by his secretary, the senator Cassiodorus, a man of learning, who induced his illiterate master to become a patron of letters. Towards the close of his reign, an intolerant edict of the Byzantine court against the Arians in its dominions, induced Theodoric, against his usual policy, to meditate a retaliation against the Catholics of Italy, which, however, was prevented from taking place by his death. It is to be lamented that an act of tyranny against two exemplary characters, Boethius (q. v.), and Symmachus, his father-in-law, closed his career. These senators were both put to death, on the mere suspicion of an intrigue between a senatorial party and the imperial court. This cruel act had no sooner been perpetrated, than Theodoric was seized with remorse; and a fever ensued, which terminated his life in three days, in 526, the seventy-second year of his age, and fifty-second of his reign. The ordinary residence of this king was at Ravenna, above which city his daughter Amalasuntha (left regent of Italy until the majority of one of her nephews) erected a splendid monument to his memory. (See Gibbon's *Decline and Fall*, ch. xxxix, and the article *Goths*.)

Theodosius, surnamed the Great, a Roman emperor, was the son of a distinguished general of the same name, who was executed for the alleged crime of treason, at Carthage, in 376. He was born about 346, at Canca, in Galicia, or, according to some accounts, at Italica, near Seville. At a very early age, he obtained separate command; but, on the execution of his father, he sought retirement, until selected by the emperor Gratian, in 379, for his partner in the empire. To his care were submitted Thrace and the eastern provinces, which he delivered from an invasion of the Goths. This emperor distinguished himself by his zeal for orthodoxy and intolerance of Arianism, which he put down throughout the whole of his dominions. In the space of fifteen years, he promulgated the same number of edicts against heretics; and the office of inquisitors of the faith was first instituted in his reign. He liberated the provinces from the barbarians with great prudence and diligence, and, in the various warlike and other proceedings of his reign, showed himself an able and equitable monarch, except when under the influence of resentment or religious zeal. On the defeat and death of Maximus, he became the sole head of the empire, although he administered the affairs of the West in the name of Valentinian, the son of Gratian, then a minor. He passed three years in Italy, during which period the Roman senate, which still chiefly adhered to the old religion, begged permission to restore the altar of victory—a request which he at first was inclined to grant, until prevented by St. Ambrose, who also induced him to pardon some zealots for having burned a Jewish synagogue. In 390, a sedition took place in Thessalonica, the result of which has branded the name of Theodosius with great odium. The origin of the catastrophe was in itself very trivial, being simply the imprisonment of a favorite charioteer of the circus. This provocation, added to some former disputes, so inflamed the populace, that they murdered their governor and several of his officers, and dragged their mangled bodies through the mire. The resentment of Theodosius was natural and merited; but the manner in which he displayed it was in the highest degree detestable and inhuman. An invitation was given, in the emperor's name, to the people of Thessalonica, to an exhibition at the circus, and when a great concourse of spectators had assembled, they were massacred by a body of barbarian soldiery, to the number, according to the lowest computation, of 7000, and to the highest, of 15,000. For this atrocious proceeding, Ambrose, with great courage and propriety, refused him communion for eight months; and the docile, and, it is to be hoped, repentant Theodosius humbly submitted. About this time, the pious emperor crowned his merits, as a foe to paganism, by demolishing the celebrated temple of Serapis, and all the other heathen temples of Egypt; and he also issued a final edict, prohibiting the ancient worship altogether. On the murder of Valentinian by Arbogastes, and the advancement of Eugenius in his place, the emperor carried on a war against the latter, which finally terminated in his defeat and death. Theodosius did not long survive this success; but after investing his sons, Arcadius and Honorius, with the Eastern and Western empire, he was carried off, at Milan, by a dropsical disorder, in January, 395, in the fiftieth year of his age, and sixteenth of his reign. He died possessed of a distinguished reputation, which was much confirmed by his services to orthodoxy and his docility towards the priesthood. He was doubtless a man of considerable abilities, and possessed many public and private virtues, which, however, will scarcely excuse the fierceness of his intolerance, or the barbarity of his anger and revenge. (See Gibbon's *Decline and Fall*, ch. xxvi, xxvii, and xxviii.)

Theognis of Megara lived between 560 and 470 B. C., at a time when the popular party had gained the ascendency in his native town. He and many others of the aristocratic party were in consequence banished. During his banishment, which he spent partly in Sparta, partly in Sicily, partly in Thebes, or immediately after his return to Megara, he wrote his maxims and moral precepts in elegiac verse. Their aristocratic tendency is explained by the circumstances of his life. They are among the most valuable remains of the gnomic poetry of the Greeks, and have recently been arranged and illustrated in the edition of Welcker (1826), in a new and ingenious way.

Theogony is the doctrine of the generation and descent of the gods, as drawn from the ancient mythuses. The most ancient Greek theogony known to us is that of Hesiod.

Theology. (See *Appendix*, end of this volume.)

Theology, Natural, is the knowledge which we have of God from his works by the light of nature and reason.

Theomancy (from θεος, God, and μαντεια, prophecy) was that species of prophecy in which a god himself was believed to reveal futurity. Oracles were considered as public institutions for prophesying at distinct places and periods; but the communications embraced under the head of theomancy were extraordinary predictions, not limited by any such restrictions. There were three classes of persons who considered themselves as particularly the subjects of such communications: 1. the possessed, i. e. such as believed themselves possessed by some dæmon (q. v.); 2. enthusiasts (*enthusiastæ*, *theopneustæ*), who pretended to be seized by a certain enthusiasm with which a god had inspired them; 3. ecstatics, i. e. such as fell into ecstasies. They lay as if in a trance, and, when they recovered their consciousness, spoke of having witnessed the strangest things, which were considered as indicating that the soul, during the trance, had left the body, and gone into another world, to visit the abodes of the gods or the departed. Such fanatics or impostors have appeared, not only among the Greeks, but among all uncultivated nations, of whatever religion.

Theophane; a daughter of Bisaltus, whom Neptune changed into a sheep to remove her from her numerous suitors. The god afterwards assumed the shape of a ram, and under this form had by the nymph a ram with a golden fleece, which carried Phryxus to Colchis.

Theophany (from θεος, God, and φαινομαι, I appear); a festival at Delphi, celebrated on the anniversary of the day when Apollo had revealed himself to the Delphians. At a later period, revelations and appearances of deities to particular individuals were so called, and, finally, the general manifestation of revelation in the world. (See *Epiphany*.)

Theophilanthropists (from θεος, God, φιλος, friend, and ανθρωπος, man); friends of God and man; the title assumed by a religious society formed at Paris during the French revolution. The object of its founders was to revive public religious ceremonies, which had altogether ceased during the reign of terror, without returning to the doctrines and rites of Christianity, which were incompatible with the deism professed by the theophilanthropists. In 1796, five heads of families—Chemin, Mareau, Janes, Haüy (brother of the celebrated philosopher), and Mandar—associated themselves, and, December 16, held their first meeting for the purposes of divine worship and moral instruction, according to the dictates of natural religion. These assemblies were held weekly: the exercises consisted of prayer, moral discourses, and singing, and the numbers of the society rapidly increased. The directory granted them the use of the ten parish churches of Paris, in which their services were performed at first on *Decadi*, and afterwards on Sunday, at the hour of noon. The temples were appropriately fitted up, and adorned with religious and moral inscriptions, an ancient altar, with a basket containing flowers, as an offering to the Supreme Being, a pulpit, and allegorical paintings, and banners, with inscriptions and emblematic devices. The theophilanthropists had no peculiar spiritual order; but the officers of the society were an overseer, a president of the temple, a reader, and an orator, who wore a long white robe over a blue dress, with a sash or girdle of various colors, during the performance of divine worship, but who enjoyed no privileges and received no pay. Their dogmas consisted solely of a belief in the existence of God, and in the immortality of the soul; their doctrine was pure deism, derived chiefly from the Scriptures, and containing a practical morality, which differed from that of Christianity chiefly in its leaning to eudæmonism. (q. v.) Their liturgy was simple and touching: the pardon of sins was implored of God; but Jesus Christ was considered only as a man of extraordinary wisdom, and not as a savior. The writings of the theophilanthropists, which proceeded chiefly from Chemin, dwelt principally upon the moral duties. The festivals of nature, of love of country, of conjugal fidelity, &c. (see *Festivals*), were scrupulously observed. Instead of baptism, a sort of consecration or initiation by exhortations to the parents and godparents was solemnized; for confirmation was substituted a reception into the society with vows, and in place of marriage, a symbolical union by rings and bands, wound round the hands of the wedded couple: these were the only ceremonies. Distinct schools were established for the instruction of youth in theophilanthropism. The expenses of public worship were paid by means of collections and the contributions of the members, and the directory also granted small sums. The example of the Paris theophilanthropists was followed in many of the provincial cities of France, and some attempts were made to introduce their principles into other countries, but without success. The revival of the Catholic religion, and particularly the concordate (q. v.) with Pius VII, hastened the decline of the society, which had already lost many of its members, when the consuls, in 1802, prohibited them from holding their meetings in the churches; and from this time, they no longer appear as a body. (See *Revellière-Lépaux*, end of volume x.)

Theophrastus, a native of Eresus, in the island of Lesbos, was the son of a fuller, and became famous as a naturalist and philosopher. He was born 371 B. C., and studied at Athens, in the school of Plato, and afterwards under his rival Aristotle, of whom he was the favorite pupil and successor. His original name was Tyrtamus, which his master, in admiration of his genius and eloquence, exchanged for that of Euphrastus, or the fine speaker, and afterwards for that of Theophrastus, or the divine orator, by which he is familiarly known. On the departure of Aristotle from Athens, after the judicial murder of Socrates, he became the head of the Peripatetic school of philosophy, where two thousand students are said to have attended his lectures. His fame extended to foreign countries; kings and princes solicited his friendship; and he was treated with particular attention by Cassander, the sovereign of Macedon, and Ptolemy Lagus, king of Egypt. Theophrastus composed a multitude of books—dialectic, moral, metaphysical and physical—the titles of 200 being specified by Diogenes Laertius. About twenty of these have escaped the ravages of time, among which are his Natural History of Stones, of Plants, of the Winds, &c.; and his Characters, or Ethic Portraits, by far the most celebrated of all his productions, and the model of numerous imitators, including the moral satirist La Bruyère. Some of his moral sentences are striking; e. g. "Respect yourself, and you will have no occasion to blush before others." He died about 286 B. C., and, consequently, if the preceding date of his birth be correct, he must have been but eighty-five at the time of his decease, though some state him to have survived to the age of a hundred and seven. To his care we are indebted for the preservation of the writings of Aristotle, who, when dying, intrusted them to the keeping of his favorite disciple. The works of Theophrastus were published collectively by Dan. Heinsius (Leyden, 1613, folio), and by Schneider (Leipsic, 1818—1821, 5 vols., with a Latin translation); and among the numerous editions of his Characters may be noticed those of Needham (Cambridge, 1712, 8vo.), of Fischer (Coburg, 1763, 8vo.), and the recent English translation, with notes, and the Greek text, by Mr. F. Howell.

Theophrastus Paracelsus. (See *Paracelsus.*)

Theorbo (*tiorba*); an instrument, no longer in use, similar to the lute (q. v.), at least in regard to the body and the neck, which is, however, longer. It has 14—16 strings, of which the eight large ones in the base are twice as long and thick as those of the lute. It was principally used for accompaniment. The system of the theorbo has five lines with proper notes; that of the lute has six lines with letters.

Theory (from the Greek θεωρια, contemplation) originally signified the investigation and knowledge of supernatural subjects by means of contemplation. The most common significations of the word at present are, 1. speculation; a doctrine which terminates in speculation or contemplation without a view to practice. Here it is taken in an unfavorable sense, as implying something visionary. 2. An exposition of the general principles of any science, as the theory of music. 3. The science distinguished from the art; e. g. the theory of medicine as distinguished from the practice. 4. The philosophical explanation of phenomena, either physical or moral, as Lavoisier's theory of combustion, Smith's theory of moral sentiments. *Theory* is distinguished from *hypothesis* thus:—A theory is founded on inferences drawn from principles which have been established on independent evidence; a hypothesis is a proposition assumed to account for certain phenomena, and has no other evidence of truth than that it affords a satisfactory explanation of those phenomena.

Theosophy (from θεος, God, and σοφια, wisdom); according to its etymology, the science of divine things. But the name of *theosophists* has generally been applied to persons who, in their inquiries respecting God, have run into mysticism, as Jacob Böhme, Swedenborg, St. Martin, and others.

Theramenes; an Athenian philosopher and general in the age of Alcibiades. He was one of the thirty tyrants at Athens, but had no share in the cruelties and oppression which disgraced their administration. He was accused by Critias, one of his colleagues, because he opposed their views, and was condemned to drink hemlock, though innocent, and defended by Socrates. He drank the poison with great composure, and poured some of it on the ground, with the sarcastical exclamation of "This is to the health of Critias," about 403 B. C.

Therapeutæ. (See *Essenes.*)

Therapeutics (from θεραπευω, to attend to the sick) is that part of medicine which teaches the way of curing diseases. It treats of the symptoms of disease, and the conclusions to be drawn from them, of the power of nature, and how far it may be relied on, of the mode of cure to be adopted, and the different systems which have acquired reputation.

Theresa, Maria. (See *Maria Theresa.*)

Theresa, St.; a religious enthusiast, born at Avila, in Spain, in 1515. At an early age, the perusal of the Lives of the Saints inspired her with the desire to become a martyr; and she eloped from home to seek death at the hands of the Moors. Being brought back, she erected a hermitage in her father's garden for retirement and devotion. She took the veil among the Carmelites, at Avila, at the age of twenty-two. Her rapturous piety and religious zeal inspired general admiration; and, being dissatisfied at the relaxation of discipline which she noticed in the order to which she belonged, she undertook to restore the original severity of the institute. She founded the first convent of reformed Carmelite nuns at Avila, in 1562, and a monastery of friars, in 1568, at Dorvello, where originated the order of Barefooted Carmelites. (See *Carmel.*) She lived to witness the foundation of thirty convents for her followers; and members of the order subsequently obtained settlements in most Catholic countries. She died at Alba, in October, 1582, and was canonized by pope Gregory XV. Her life, by herself, is curious.

Theriaca; a celebrated antidote against poisons, in the form of an electuary, formerly in great repute, the composition of which is attributed to Andromachus of Crete, physician to the emperor Nero. (See *Poison.*) That physician has described its composition in a poem, which has been preserved by Galen (*De Antidotis I*, c. 6). This theriaca is composed of about seventy ingredients, some of which are altogether inoperative, and some counteract each other's effects. It, however, preserved its reputation till modern times; and it is not long since the apothecaries in Venice, France, and other places, were obliged to compound it, with great solemnity, in the presence of magistrates.

Thermæ (from the Greek θερμαι, signifying originally warm or hot springs); properly warm baths, but also applied generally to the baths of the ancients. (See *Bath.*) During the Roman empire, the buildings for this purpose were constructed with great splendor, and adorned with paintings, statuary, libraries, gymnasia, and public walks. The baths of Nero, Titus, Caracalla and Diocletian were distinguished for the magnificence and luxury displayed in their construction.

Thermidor. (See *Calendar*, vol. ii, p. 403.)

Thermidor, 9th, year II (July 27, 1794); celebrated, in the French revolution, for the overthrow of Robespierre and the Mountain party, which put an end to the reign of terror. Tallien (q. v.) was the first to denounce Robespierre and his adherents, St. Just, Couthon, Henrion, who were arrested by order of the convention (9th Thermidor), and executed on the following day. (See *France*, division *History*.)

Thermo-Electro-Magnetism; the phenomena arising out of a flow of electro-magnetism, occasioned by disturbing merely the equilibrium of temperature. The apparatus for exciting it is composed of three bars of bismuth and three of antimony, soldered alternately together, so as to form a hexagon, which includes three elements, or three pairs. The length of the bars is about 4.7 inches, their breadth 0.6 of an inch, and their thickness 0.16 of an inch. This circuit is put upon two supports, and in a horizontal position, observing to give to one of the sides of the hexagon the direction of the magnetic needle, which is placed below the side, and as near it as possible. On heating one of the solderings with the flame of a lamp, a very sensible effect on the needle is produced. On heating two solderings, not contiguous, the deviation becomes considerably greater; and, on heating the three alternate ones, a still greater effect is produced. By resorting to an inverse process, i. e. by reducing to 32° Fahr. by melting ice, the temperature of one or more solderings of the circuit—the solderings not cooled being regarded as heated in reference to others—and by combining the action of the ice with that of the flame, viz. by heating three solderings and cooling the other three, the deviation of the needle amounts to 60°.

Thermolampe; the name given by Lebon to his apparatus for illuminating by gas. (See *Gas-Lighting*, page 388, vol. v.)

Thermometer; an instrument for measuring heat, founded on the principle that the expansions of matter are proportional to the augmentations of temperature. With regard to aeriform bodies, this principle is probably well founded; and hence our common thermometers may be rendered just by reducing their indications to those of an air thermometer. Solids, and still more liquids, expand unequally, by equal increments of heat, or intervals of temperature. With regard to water, alcohol and oils, this inequality is so considerable as to occasion their rejection for purposes of exact thermometry. But mercury approaches more to solids than ordinary liquids in its rate of expansion, and hence, as well as from its remaining liquid through a long range of temperature, is justly preferred to the above substances for thermometric purposes. A common thermometer, therefore, is merely a vessel in which very minute expansions of mercury may be rendered perceptible, and, by certain rules of graduation, be compared with expansions made on the same liquid by other observers. The first condition is fulfilled by connecting a narrow glass tube with a bulb of considerable capacity filled with mercury. As this fluid metal expands one sixty-third by being heated in glass vessels, from the melting point of ice to the boiling point of water, if ten inches of the tube have a capacity equal to one sixty-third of that of the bulb, it is evident that, should the liquid stand at the beginning of the tube at 32°, it will rise up and occupy ten inches of it at 212°. Hence, if the tube be uniform in its calibre, and the above space be divided into equal parts by an attached scale, then we shall have a centigrade or Fahrenheit's thermometer, according as the divisions are 100 or 180 in number. Such are the general principles of the construction of thermometers. The tubes drawn at glass-houses, for making thermometers, are all more or less irregular in the bore. Hence, if equal apparent expansions of the included mercury be taken to represent equal thermometric intervals, these equal expansions will occupy unequal spaces in an irregular tube. The attached scale should, therefore, correspond exactly to these tubular inequalities; or, if the scale be uniform in its divisions, we must be certain that the tube is absolutely uniform in its calibre. The first step in the formation of this instrument, therefore, is to graduate the tube into spaces of equal capacity. A small caoutchouc bag, with a stop-cock and nozzle, capable of admitting the end of the glass tube when it is wrapped round with a few folds of tissue paper, must be provided, as also pure mercury, and a sensible balance. Having expelled a little air from the bag, we dip the end of the attached glass tube into the mercury, and by the elastic expansion of the caoutchouc, we cause a small portion of the liquid to rise into the bore. We then shut the stop-cock, place the tube in a horizontal direction, and remove it from the bag. The column of mercury should not exceed half an inch in length. By gently inclining the tube, and tapping it with the finger, we bring the mercury to about a couple of inches from the end where we mean to make the bulb, and, with a file or diamond, mark there the initial line of the scale. The slip of ivory, brass or paper, destined to receive the graduations, being laid on a table, we apply the tube to it so that the bottom of the column of mercury coincides with its lower edge. With a fine point, we then mark on the scale the other extremity of the mercurial column. Inclining the tube gently, and tapping it, we cause the liquid to flow along till its lower end is placed where the upper previously stood. We apply the tube to the scale, taking care to make its initial line correspond to the edge as before. A new point for measuring equal capacity is now obtained. We thus proceed till the requisite length be graduated, and we then weigh the mercury with minute precision. The bulb is next formed at the enameller's blow-pipe, in the usual way. One of a cylindrical or conical shape is preferable to a sphere, both for strength and sensibility. We now ascertain and note down its weight. A tubular coil of paper is to be tied to the mouth of the tube, rising in a funnel-form an inch or two above it. Into this we pour recently boiled mercury, and, applying the gentle heat of a lamp to the bulb, we expel a portion of the air. On allowing the bulb to cool, a portion of the mercury will descend into it, corresponding to the quantity of air previously expelled. The bulb is now to be heated over the lamp till the included mercury boil briskly for some time. On removing it, the quicksilver will descend from the paper funnel, and completely fill the bulb and stem. Should any portion of air appear, the process of heating or boiling must be repeated, with the precaution of keeping a column of superincumbent mercury in the paper funnel. When the temperature of the bulb has sunk to nearly that of boiling water, it may be immersed in ice-water. The funnel and its mercury are then to be removed, and the bulb is to be plunged into boiling water. About one sixty-third of the mercury will now be expelled. On cooling the instrument again in melting ice, the zero point of the centigrade scale, corresponding to 32° of Fahrenheit, will be indicated by the top of the mercurial column. This point must be noted with a scratch on the glass, or else by a mark on the prepared scale. We then weigh the whole. We have now sufficient data for completing the graduation of the instrument from one fixed point; and, in hot climates, and other situations, where ice, for example, cannot be conveniently procured, this facility of forming an exact thermometer is important. We know the weight of the whole included mercury, and that of each *gradus* of the stem. And, as from 32° to 212° Fahr., or from 0° to 100° cent., corresponds to a mercurial expansion in glass of one sixty-third, we can easily compute how many of our graduating spaces are contained in the range of temperature between freezing and boiling water. Thus supposing the mercurial contents to be 378 grains, one sixty-third of that quantity, or six grains, correspond to 180 of Fahrenheit's degrees. Now, if the initial measuring column were 0.6 of a grain, then ten of these spaces would comprehend the range between freezing and boiling water. Hence, if we know the boiling point, we can set off the freezing point; or, from the temperature of the living body, 98° Fahr., we can set off both the freezing and boiling points of water. In the present case, we must divide each space on our prepared scale into eighteen equal parts, which would constitute degrees of Fahrenheit; or into ten equal parts, which would constitute centigrade degrees; or into eight, which would form Réaumur's degrees. When we have ice and boiling water at hand, however, we may dispense with the weighing processes. By plunging the instrument into melting ice, and then into boiling water, we find how many of our initial spaces on the stem correspond to that interval of temperature, and we subdivide them accordingly. If the tube be very unequal, we must accommodate even our subdivisions to its irregularities, for which purpose the eye is a sufficient guide. Thermometers are used for two different purposes, each of which requires peculiar adaptation. Those employed in meteorology, or for indicating atmospherical temperature, are wholly plunged in the fluid; and hence the stem and the bulb are equally affected by the calorific energy. But when the chemist wishes to ascertain the temperature of corrosive liquids, or bland liquids highly heated, he can immerse merely the bulb and the naked part of the stem under the scale. The portion of the tube corresponding to the scale is not influenced by the heat, as in the former case; and hence one sixty-third part of the mercury, which, at 32° Fahr., was acted on, has, at 212°, escaped from its influence. Hence a meteorological and a chemical thermometer ought to be graduated under the peculiar conditions in which they are afterwards to be used. The former should have its stem surrounded with the steam of boiling water, while its bulb is immersed an inch or two beneath the surface of that liquid, the barometer having at the time an altitude of thirty inches. A thermometer for chemical experiment should have its boiling point determined by immersion only of the bulb, and the naked portion of its stem below the scale, in boiling water. The water, of course, must be pure; and it ought to be contained in a metallic vessel. Before sealing up the end of the tube, we should draw it into a capillary point, and heat the bulb till the mercury occupy the whole of the stem. A touch of the blow-pipe flame on the capillary glass will instantly close it, and exclude the air from reëntering when the bulb becomes cool. If this has been skilfully executed, the column of mercury will move rapidly from one end of the tube to the other when it is inverted with a jerk. An ivory scale is the handsomest, but the most expensive. Those used in Paris consist of a narrow slip of paper enclosed in a glass tube, which is attached in a parallel direction to the thermometer stem. It is soldered to it above by the lamp, and hooked to it below by a ring of glass.

Comparative Scales of Thermometers. A fertile cause of error in estimating and comparing the statements of temperature, is the very different manner in which they are made by scientific men of different nations. Wherever the English language prevails, the graduation of Fahrenheit is generally preferred. By the German authors Réaumur is used; and the French have, within a few years, decided to adopt that of Celsius, a Swedish philosopher, calling it *thermomètre centigrade.* The Russians still use the graduation of De Lisle. The two remarkable temperatures of the boiling and the freezing of water are thus expressed by the several thermometers mentioned:

	Fahr.	Centig.	Réaum.	De Lisle.
Boiling point, . . .	212° . . .	. 100° . . .	80° . . .	0°
Freezing point . . .	32 . . .	. 0 . . .	0 . . .	150

So that the number of degrees of each, included between these two points in each, is 180° Fahr., 100° centig., 80° Réaum., 150° De Lisle; and of course 9° Fahr.=5° centig.=4° Réaum.=7½ De Lisle. Fahrenheit's is, therefore, the smallest degree, and Réaumur's the largest. The 0° is called the *zero:* all degrees below this are called *minus*, and are prefixed by a dash, thus -20°. In the Réaumur and centigrade scales, the degrees above zero are also called *plus*, and marked thus, +20°, to prevent one kind being mistaken for another.—*Rules for changing the degrees of any one of the scales into equivalent degrees of another:*—*Fahrenheit into Réaumur.* Each degree of Fahrenheit is equal to four ninths of one of Réaumur. As Réaumur, however, reckons his degrees from the freezing point, and Fahrenheit 32° below this point, we must, when the number of Fahrenheit's degrees to be reduced indicates a temperature above the freezing point, first deduct thirty-two, and then multiply the remainder by four, and divide the product by nine. The quotient is the corresponding number of degrees on Réaumur's scale. If the temperature indicated was less than the freezing point, we must also be careful to take the actual number of degrees, reckoning from the freezing point. Thus four degrees above Fahrenheit's zero is twenty-eight below his freezing point; and this is the number to be reduced to Réaumur's scale.—*Réaumur into Fahrenheit.* Each degree of Réaumur is equal to 2¼ of one of Fahrenheit. Multiply the given number of degrees of Réaumur by nine, and divide the product by four. If the degrees of Réaumur were minus, the quotient must be deducted from thirty-two, and the remainder will be the equivalent degrees of Fahrenheit. If the given degrees were not minus, the quotient must be added to thirty-two degrees, and the sum will be the equivalent sought.—*Fahrenheit into Centigrade.* Each degree of Fahrenheit is equal to five ninths of one of the centigrade. Proceed as in the case of Fahrenheit into Réaumur, multiplying, however, by five and dividing by nine.—*Centigrade into Fahrenheit.* Proceed as in Reaumur into Fahrenheit, multiplying by nine and dividing by five.—*Réaumur into Centigrade.* Each degree of Réaumur is equal to 1¼ of the centigrade. Multiply the given number of degrees of Réaumur by five, and divide the product by four; the quotient will be the equivalent number of degrees on the centigrade scale.—*Centigrade into Réaumur.* Each degree of the centigrade is equal to ⅘ of Réaumur. Multiply the given number of degrees of the centigrade by four, and divide the product by five; the quotient will be the equivalent number of degrees on Réaumur's scale. Extensive tables of the correspondence of these thermometrical scales, and of some of the most remarkable temperatures, may be found in the *Treatise on the Thermometer and Pyrometer,* in the Library of Useful Knowledge. (See our article *Pyrometer.*)

Thermopylæ; a narrow defile in Greece, leading from Thessaly into Locris and Phocis; between mount Æta and the sea; 40 miles north of Thebes. It is five or six miles long, but was only fifty or sixty paces (in the narrowest part only twenty-feet) wide, in the time of the Greeks: it is now nearly double, from the retiring of the sea. The cliffs overhanging the pass are, in general, from 400 to 600 feet high. It is celebrated for a desperate resistance against the Persian army, made by 300 Spartans, under Leonidas. (q. v.) It was called by the Greeks simply *Pylæ* (gates), or *Thermopylæ,* from the warm springs (*thermæ*) hard by. In Strabo's time, the pass was still adorned by the monument erected in honor of Leonidas and his followers, on which was this simple inscription: "Stranger, tell the Lacedæmonians that we lie here in obedience to their laws." Thermopylæ now forms a part of the north-eastern frontier of Greece, as determined by the protocol of Feb. 3, 1830.

Theroigne de Méricourt, called the revolutionary Amazon, was born near Luxemburg, and previous to the revolution of 1789, had been a prostitute in Paris. She was no less remarkable for her oratorical powers than for her beauty; and she took an active part in some of the tumults of that period. She is said to have been at Versailles on the 5th of October, and to have been employed in distributing money and haranguing the mob. In 1790, having accompanied the secret agents who were sent to excite insurrections in Liege, she was taken prisoner by the Austrians, and carried to Vienna, but soon after released. In 1792, we find her again at Paris, the champion of constitutional principles. She appeared in public armed with a pike, or sabre and pistols, at the head of a troop of furious Amazons. It was she who caused Suleau and five others, who had been arrested on suspicion, to be murdered, Aug. 10, 1792. She soon after proved to be insane, and was confined in a mad-house until her death, in 1817.

Thersites; a Grecian at the siege of Troy, who is described by Homer as the most deformed of the Greeks, squinting, lame, hunch-backed and bald-headed. He was noted for his malice, and was continually provoking his fellow-soldiers, particularly Agamemnon, Ulysses and Achilles by his taunts and sarcasms. He is said to have been killed by Achilles.

Theseus; king of Athens, and son of Ægeus by Æthra, the daughter of Pittheus; one of the most celebrated of the heroes of antiquity. He was educated at Trœzene, at the house of Pittheus, and passed for the son of Neptune. When he came to years of maturity, he was sent by his mother to his father, and a sword was given him, by which he might make himself known to Ægeus, in a private manner. (See *Ægeus.*) His journey to Athens was not across the sea, as was usual with travellers; for he determined to signalize himself in going by land, and encountering difficulties. The road which led from Trœzene to Athens was infested with robbers and wild beasts; but these obstacles were removed by his courage. He destroyed Corynetes, Sinnis, Sciron, Procrustes, Cercyon and Phæa. At Athens, however, his reception was not cordial. Medea lived there with Ægeus; and as she knew that her influence would fall to the ground if Theseus was received in his father's house, she attempted to destroy him before his arrival was made public. Ægeus was to give the cup of poison to the stranger; but at the sight of his sword on the side of Theseus, he knew him to be his son. The Pallantides, who expected to succeed their uncle Ægeus on the throne, as he had no children, attempted to assassinate Theseus; but they failed in the attempt, and were all put to death by the young prince. The bull of Marathon next engaged the attention of Theseus. He caught the animal alive, and, after he had led it through the streets of Athens, sacrificed it to Minerva or the god of Delphi. After this, Theseus went to Crete among the seven chosen youths whom the Athenians yearly sent to be devoured by the Minotaur. The wish to deliver his country from so dreadful a tribute engaged him to undertake this expedition. He was successful, by means of Ariadne, the daughter of Minos, who was enamored of him; and, after he had escaped from the labyrinth with a clew of thread, and killed the Minotaur (see *Minotaurus*), he sailed from Crete with the six boys and seven maidens whom his victory had redeemed from death. In the island of Naxos, whither he was driven by the winds, he had the meanness to abandon Ariadne, to whom he was indebted for his safety. The rejoicings which his return might have occasioned at Athens, were interrupted by the death of Ægeus, who threw himself into the sea, when he saw his son's ship return with black sails, which was the signal of ill success. He succeeded his father. The Athenians were governed with mildness, and Theseus made new regulations, and enacted new laws. The number of the inhabitants of Athens was increased; a court was instituted, which had the care of all civil affairs; and Theseus made the government democratical, while he reserved for himself only the command of the armies. (See *Attica*.) The fame which he had gained by his victories and policy made his alliance courted; but Pirithous, king of the Lapithæ, alone wished to gain his friendship, by meeting him in the field of battle. He invaded the territories of Attica; and, when Theseus marched out to meet him, the two enemies, struck at the sight of each other, cordially embraced; and from that time began the most sincere friendship, which has become proverbial. Theseus was present at the nuptials of his friend; and he was the most courageous of the Lapithæ, in the defence of Hippodamia, and her female attendants, against the attempts of the Centaurs. When Pirithous (q. v.) had lost Hippodamia, he agreed with Theseus, whose wife was also dead, to carry away some of the daughters of the gods. Their first attempt was upon Helen. After they had obtained the prize, they cast lots, and she became the property of Theseus; but the resentment of Castor and Pollux soon obliged him to restore her into their hands. Theseus assisted his friend in procuring a wife, and they descended into the infernal regions to carry away Proserpine. Pluto, apprized of their intentions, stopped them; and Pirithous was placed on his father's wheel, and Theseus was tied to a huge stone, on which he had sat to rest himself. Virgil represents him in this state of punishment; but others declare, that he was not long detained in hell. When Hercules came to steal the dog Cerberus, he tore him away from the stone, but with such violence, that his skin was left behind. During the captivity of Theseus in the kingdom of Pluto (see *Phædra*), Mnestheus, one of the descendants of Erechtheus, ingratiated himself into the favor of the people of Athens, and obtained the crown. Theseus attempted to eject the usurper, but to no purpose. The Athenians had forgotten his services; and he retired to the court of Lycomedes, king of Scyros, who, either jealous of his fame, or bribed by Mnestheus, threw him down a deep precipice. Some suppose that Theseus inadvertently fell down this precipice, and that he was crushed to death. The children of Theseus, after the death of Mnestheus, recovered the Athenian throne, brought his remains from Scyros, and gave them a magnificent burial. They also raised statues and a temple; and festivals and games were publicly instituted to commemorate his actions. These festivals were still celebrated in the age of Pausanias and Plutarch, about 1200 years after the death of Theseus. The historians disagree with the poets in their accounts of this hero; and they all suppose, that, instead of attempting to carry away the wife of Pluto, the two friends wished to seduce a daughter of Aidoneus, king of the Molossi. This daughter, as they say, bore the name of Proserpine; and the dog which kept the gates of the palace was called Cerberus; and hence arises the fiction of the poets. Pirithous was torn to pieces by the dog; but Theseus was confined in prison, from whence he made his escape some time after, by the assistance of Hercules. Some authors place Theseus and his friend in the number of the Argonauts; but they were both detained, either in the infernal regions, or in the country of the Molossi, at the time of Jason's expedition to Colchis.

Thesis (θεσις, position, formed from τιθημι, I put or lay down); in the schools, a general proposition which a person advances and offers to maintain. In logic, every proposition may be divided into thesis and hypothesis. Thesis contains the thing affirmed or denied, and hypothesis the conditions of the affirmation or negation. Thus, "if a triangle and parallelogram have equal bases and altitudes (hypothesis), the first is half of the second" (thesis). (For arsis and thesis, see *Rhythm.*)

Thesmophorus. (See *Ceres.*)

Thespis, a native of a village near Athens, lived in the time of Solon, in the first half of the sixth century B. C., and is considered the inventor of tragedy, as he added to the dithyrambic choruses of the feats of Bacchus a character, which, when the chorus was silent, generally recited a mythical story. He received for his trouble a he goat (τραγος); and this gave occasion to the name *tragedy.* Thespis used a wagon for his stage. (See *Drama.*)

Thessalonica. (See *Salonica.*)

Thessaly, **Thessalia**; the northern part of ancient Greece Proper, bounded on the east by the Thermaic gulf, separated from Bœotia on the south by mount Œta, from Epirus on the west by mount Pindus, and from Macedonia on the north by mount Olympus. It is a fruitful and picturesque country, in which beautiful and rich plains interchange with elevated districts, and watered by numerous streams, among which the Peneus was the most celebrated, for its vale of Tempe. Its cornfields and vineyards were not less productive than its meadows, and it was famous for its breed of horses. The Thessalians were considered the best horsemen among the Greeks, and the invention of equitation has been attributed to them. The Hæmones (from whom the country was also called *Hæmonia*) were considered the original inhabitants. The Pelasgians and Hellenes, the latter under Deucalion, in the sixteenth century B. C., afterwards settled in this region, in which dwelt also the Centaurs and Lapithæ, mountaineers residing on Olympus and Ossa. The eastern promontory, which stretched far out into the Ægean sea, was formed by mount Pelion, which the giants piled upon Ossa in their attempt to storm heaven. Upon the summit of Pelion (now *Petra*) is a celebrated cavern, in which the Centaur Chiron, the tutor of Achilles, was said to have lived. In Thessaly, Achæus, Æolus, and Dorus, the founders of the tribes which bore their name, are first discovered, and several small states successively rose here Among them was Iolchos, the dominion of Æson, father of Jason, the leader of the Argonauts; Phthia, where Peleus, father of Achilles, ruled over the Myrmidons; and Pheræ, which at a later period became a powerful kingdom. Here reigned Admetus, husband of Alceste, and Alexander the tyrant. At Anthela, near Thermopylæ, were held the autumnal sessions of the Amphictyons. Philip of Macedon made himself master of all Thessaly, and it remained under the Macedonian dominion until it became a Roman province. It now forms, under the name of *Janiah*, or *Janna*, a part of European Turkey, the boundary line of Greece, as fixed by the protocol of Feb. 3, 1830, running to the south of it. The old geographers divide the country into Thessaliotis, Phthiotis, Pelasgiotis and Hestiæo[illegible]; or, instead of the two last, into Magnesia and Perrhæbia. The most remarkable mountains of Thessaly are the Pindus, Œta, Ossa, Pelion, and particularly the seat of the gods, Olympus, on the frontiers of Macedonia. Among the rivers, besides the Peneus, are the Apidanus, Achelous, Asopus, and Sperchius; among the towns, besides those already named, Hellas, Trachis or Heraclea, Pharsalus and Larissa, now the chief town in this part of the country. Achilles, Jason, Philoctetes, Patroclus and Pirithous were Thessalians. Thessaly had also the reputation of producing the most powerful sorceresses; and the Thessalian women were so famous for their skill in magical arts, that *Thessalis* was sometimes used to signify a *sorceress* or *witch.*

Thetis; a daughter of Nereus and Doris, therefore one of the Nereids. She aided Jupiter against the Titans, who attempted to bind him, and called in Briareus to his assistance. Jupiter and Neptune became enamored of her, according to Pindar, and sought her in marriage; but Themis or Prometheus forewarned them that she would bear a son greater and more powerful than his father. She was therefore destined, by the gods, to become the bride of Peleus, king of the Myrmidons, in Thessaly. She changed herself into a thousand forms to avoid his embraces; but Peleus finally obtained the same power of transformation, by the instructions of Proteus or Chiron, and she was at length obliged to yield. The nuptials were celebrated on mount Pelion, and were honored by the presence of all the gods. She bore to Peleus seven children, all of whom she placed in the fire while her husband slept, in order to consume whatever was mortal in them. But they had too little of the immortal nature; and all perished except Achilles, whom Peleus snatched from the flames. Irritated at this act, Thetis abandoned her husband, and returned to the Nereids, her sisters. She still, however, took an interest in the fate of her son, dipped him in the Styx to render him invulnerable, and sent him, in a female dress, to the court of Lycomedes, at Scyros, to prevent him from taking part in the Trojan war. After the death of Achilles (q. v.), Thetis clothed his body with celestial garments, and caused the most magnificent funeral games to be performed in honor of him. Thetis was a symbol of water in the old cosmogonies; and hence the fable of her being able to transform herself into a variety of shapes, since water, as the primitive element of all things, assumed all forms. Thetis was likewise the chief divinity of Phthiotis, the kingdom of Peleus; and the numerous fables concerning her were probably invented in compliment to him.

Theurdank; a German poem, written in the first part of the sixteenth century, and celebrating the exploits and adventures of Maximilian I, emperor of Germany (published at Nuremberg, 1517.)

Theurgy; the name which the ancients gave to that part of magic which we sometimes call *white magic*, or the *white art*. The word is formed from θεος (God) and εργον (work), as denoting the art of doing divine things, or things which God alone can do. It is the power of working extraordinary things by invoking the names of God, the saints, angels, &c. Accordingly, those who have written of magic in general divide it into three parts: *theurgy*, which operates by divine or celestial means; *natural magic*, performed by the powers of nature; and *necromancy*, which proceeds by invoking demons. Theurgy probably originated with the Chaldæans (q. v.), or Persians, among whom the magi chiefly occupied themselves with it. The Egyptians also pretended to great proficiency in the art. The former considered Zoroaster its author; the latter, Hermes Trismegistus. It is a branch of magic. (q. v.)

Thevenot, Melchizedec, a distinguished traveller, was born at Paris, in 1621, and had scarcely finished his studies, when he determined to gratify his inclination to visit foreign countries. Having travelled in different parts of Europe, he devoted himself entirely to study, and to the promotion of literature, by collecting books and manuscripts, and by carrying on a correspondence with the learned in various parts of the world. The office of royal librarian (1684) facilitated his researches, and he contributed much to the improvement of the establishment under his care. He died in 1692. He published *Relations de divers Voyages curieux qui n'ont point été publiés* (Paris, 1663—72, 4 parts, in 2 vols., fol.), and *Recueil de Voyages* (1681, 8vo.).

Thevenot, John de, born at Paris in 1633, was the nephew of the preceding, with whom he has sometimes been confounded. He received his education at the college of Navarre, and, in 1652, commenced a journey through England, Holland, Germany and Italy; after which he resolved to visit the East. In 1655, he embarked at Civita Vecchia, and, after touching at Sicily and Malta, went to Constantinople, Natolia, Egypt, Tunis and Carthage, and returned to France, after an absence of seven years. In 1663, he again left Paris to commence a second Oriental tour. After visiting Syria and Persia, he went to the East Indies, and, on his return through Persia, died near Tauris, in 1667. An account of his first expedition was published by himself, under the title of *Voyage de Levant* (1664, 4to.); which was followed by *Suite du même Voyage* (4to.), and *Voyage contenant la Relation de l'Indostan* (1684, 4to.). This traveller is said to have introduced into France the use of coffee.

Thibaudeau, Antoine Claire, count, previously to the French revolution, was an advocate in Poitiers, and, in 1792, was chosen member of the convention. On the trial of the king, he voted for death, against the appeal to the people, and against the delay of the execution. He was sent on several missions into the departments, in which he conducted with what, in that time, was considered moderation, but on all occasions evinced the most determined devotion to republican principles. After the 18th Brumaire, he attached himself to Napoleon, was appointed prefect of Bordeaux, counsellor of state, received the title of count, and became one of the most zealous and able adherents of the emperor. On the return of Napoleon from Elba, Thibaudeau was chosen member of the representative chamber, in which he declared himself warmly to the last, even when Paris was surrounded by the allies, against the recognition of the Bourbons. Banished from France by the *ordonnance* of July 24, 1815 (see *France*), he settled himself at Prague, and has recently published a number of works, highly important for the history of the time. These are *Mémoires sur la Convention et le Directoire* (2d ed., Paris, 1827); *Mémoires sur le Consulat* (1827); *Vie de Napoléon* (1828, seq.)

Thibaut, count of Champagne, and king of Navarre, distinguished among the early French poets, was the son of the count of Champagne, by a daughter of Sancho, king of Navarre. After having been educated at the court of Philip Augustus, king of France, he was enabled, through the influence of that monarch, to obtain the counties of Champagne and Brie, in 1221. On the death of his maternal uncle, in 1234, he became king of Navarre; and, in 1239, he embarked for the East, to engage in a crusade against the infidels. After an absence of two years, he returned to his own dominions, and died at Pampelona, July 10, 1253. Thibaut was deeply engaged in the intrigues and civil dissensions which took place in France during the minority of St. Louis. His poetical talents procured him the title of the *song-maker*. Love was the theme of his muse. M. Levesque de la Ravaliere published, with a glossary and dissertations, the songs of the king of Navarre (Paris, 1742, 2 vols., 12mo.).

Thibaut, Anthony Frederic Justus, one of the most distinguished German jurists, particularly in the department of the Roman law, at present first professor of law at Heidelberg, was born in 1774, at Hameln, in Hanover, studied at Göttingen, Königsberg and Kiel, and graduated, in 1796, at Kiel. In 1799, he was appointed *professor ordinarius* at Kiel; in 1802, professor at Jena; and, in 1805, at Heidelberg. He is the author of various treatises on law subjects: Essays (1798, 2 vols.; 2d ed., 1806); Theory of logical Interpretation (1799; 2d ed., 1806); On Possession and Prescription (1802); Criticism on Feuerbach's Revision of the Fundamental Principles of Penal Law (1802); and many reviews in the Jena General Literary Gazette, and in the Heidelberg *Jahrbücher*; but his chief work is his *System des Pandektenrechts*, which first appeared in 1803, in 2 vols. (7th ed., 1827, 3 vols.). After the overthrow of Napoleon, he wrote On the Necessity of a General System of Civil Law for Germany (1814), against which Savigny (q. v.) published his treatise, On the Aptitude of the present Age for Legislation and Jurisprudence, translated by a Barrister of Lincoln's Inn, opposing Thibaut on much the same grounds as Schlosser, in his Letters on Legislation (properly codification), in 1799, adduced against the new Prussian code, the advantages of which are acknowledged by every one acquainted with the subject. Thibaut is, besides, a great connoisseur in music, and wrote On the Purity of Music (2d ed., 1826).

Thibet, or **Tibet**; a country of Asia, forming a part of Independent Tartary, lying between lon. 74° and 100° east, and lat. 26° and 35° north, and extending from the sources of the Indus to the frontiers of China, and from Hindoostan to the desert of Cobi, comprising a superficial area of about 400,000 square miles. The natives call the land *Pue*, or *Puekachim*, signifying the *Northern Land of Snow*—a designation plainly alluding to the severity of the climate, the inclemency of which is owing to the elevated situation of the surface, Thibet being the most lofty part of the continent. Here rises the great Himalaya range, the highest in the world, the summits of which are visible for more than 200 miles. (See *Himalaya Mountains*.) The Dhawala-giri (White mountain) is 28,015 feet high, and therefore more lofty than Chimborazo, formerly considered the highest mountain on the face of the earth. Hence issue all those mountainous chains which extend into Tartary, to China, &c.; and here rise the largest rivers of Asia, the Ganges, the Burrampooter, the Irrawaddy, the Mecon, the Yang-Tse-Kiang, &c. To travellers who enter the country for the first time, it seems a land forgotten by Heaven. Immense rocks and mountains, without any appearance of vegetation, alternate with dry and infertile plains. The wheat, peas, barley, which grow on the latter, in many parts, never ripen, and serve only as fodder for cattle, when grass fails. At regular intervals rain occurs, and a short grass springs up, which stops growing as soon as the rain ceases, and is immediately so parched by the dryness of the atmosphere, as to become entirely white, and can be reduced to powder by rubbing it between the fingers. Yet it affords pasture to large herds of cattle, and is superior, in its nutritious properties, to the best grass. On the approach of winter, the Thibetans water the lower meadows, by means of large masses of ice, to prevent the dry soil from being carried away by the wind. The temperature and alternation of the seasons are remarkably regular in Thibet. From March to May rain, thunder and storms prevail. From June to September, there is a succession of violent rains; all the streams are full, and threaten to inundate Bengal. From October to March, the air is almost always clear and pure, and the sky is seldom overcast. During three months, the cold is more severe than in any part of Europe, particularly in the southern portion of the country, along the mountainous ridge which separates Thibet from Assam, Bootan and Nepaul, and which lies between lat. 26° and 27° north. The inhabitants during that period retire to the lower valleys, or into the caves of the rocks. From Phari to Nanee, a distance of nearly fifty miles, the whole country is then a mere wilderness; and the cold is so great that meat keeps fresh till March. But notwithstanding the inclemency of the climate, there is here a great abundance of wild and tame beasts. A peculiar race of cattle, called the *Yak of Tartary*, with a hunch upon the shoulders, is found in great numbers. The body is covered with a long, thick and soft hair, and the tail, which is likewise formed of long, glossy hairs, thickly set, is much used in the East to drive away flies. This animal is very wild, and lives in the coldest parts of the country, in summer upon the mountains, and in winter in the valleys. It constitutes the wealth of the wandering Tartars, who procure from it food and clothing, and make use of it as a beast of burden, for which purposes it is more suitable than for agricultural labors. On the highest mountains the musk deer is found: it is about as large as a middling-sized hog; the musk is contained in a small bag, lying near the navel, and is found only in the male. The Cashmere goat (q. v.); wild horses, which are too swift to be taken alive; the sheep, with broad fat tails; and another smaller species, with black head and legs, often used to carry burdens,—are also among the animals of Thibet. Notwithstanding the poverty of the soil, all the wants of the inhabitants are richly supplied by the animal and mineral wealth of the country. Native gold is found, in abundance, in the sands of the rivers; cinnabar, lead and copper abound in mines; the iron mines are little worked, on account of the deficiency of fuel, for which dung is much used; tincal, from which borax is prepared, and rock-salt, are found in great quantities. Trade is almost entirely a monopoly of the ruler: that with China is carried on chiefly through Silling, or Sinning, a town on the eastern frontier. The religion, according to Turner's conjecture, is a corrupt form of Braminism, which first sprang up in the southern part of the country, on the borders of India, where was, accordingly, the original seat of the dalai-lama. See Hüllman's *Critical Enquiry into the Religion of the Lama* (in German, Berlin, 1796). The principles of the religion of the Hindoos, though with many deviations, are found to prevail through Lamaism. The places which the Hindoos esteem holy (Allahabad, Benares, Darjodeen, Juggernaut, Gaya and Saugor) are also visited as such by the Thibetans, in their pilgrimages. But there are many ceremonies peculiar to the Thibetans. The people assemble in large chapels, and sing to the sound of the noisier species of instruments of great size, like those which are found in India and China, as trumpets, drums, fifes, conchs and cymbals. There are no traces of the division into castes, and the inhabitants eat with foreigners without reserve or distinction. The dalai-lama (see *Lama*) is the temporal as well as spiritual head of the country: he is considered as the vicegerent of God, invested with the power of lispensing the divine blessings to whom he will, not only directly, but mediately, through the numerous under lamas, monks, &c. But our accounts of the state of the religion, as well as of the country in general, are exceedingly imperfect and uncertain. The manners and mode of life are rude: the houses of the peasants are merely piles of stone, with holes to let in air and light. Among the diseases prevalent here is the goitre, or swelled throat, common in other mountainous regions. A rude mode of printing, with immovable letters, has been introduced from China: the characters used are derived from the Sanscrit. There are twelve colleges in Thibet, which are frequented not only by the Thibetans, but by the Tartars of the surrounding country: philosophy, astronomy, medicine and theology are taught in these seminaries; and Turner observed, when he was here in 1783, that the satellites of Jupiter, and the ring of Saturn, were not unknown to the learned, and that the physicians were acquainted with the use of mercury in syphilitic diseases. There are also schools of magic, in which the art of exorcising, &c., is taught. Thibet is subject to China: some internal troubles having occurred in 1720, the Chinese seized the opportunity to obtain an ascendency in the country. In 1793, it was invaded by the Nepaulese, who were, however, repulsed by the Chinese and the power of the latter has, since that time, been on the increase. A Chinese functionary is always stationed at the residence of the dalai-lama, who transmits information to and receives instructions from Pekin. Whether the statement, that there is another lama, called the *Bogdo lama*, who reigns in Bootan, be correct or not, our imperfect knowledge of the country does not enable us to decide. A Chinese description of Thibet has been translated into Russian, by the Russian archimandrite Hyacinth, and a German version of the Russian translation has been published at St. Petersburg (1828).

THIERSCH, Frederic Willian., a distinguished German philologist, was born in 1784, in Thuringia. His father was a farmer. He was educated at Schulpforte, in Saxony, and studied theology at Leipsic; but Hermann's (q. v.) Lectures decided him to devote himself to philology. He passed a theological examination, however, in Dresden, and then went to Göttingen, where he enjoyed the instruction of Heyne. In 1809, he published his first attempt at a paradigm, in which he aimed to resolve the forms of the Greek verb into their original elements. In his Greek Grammar (1812), he developed his plan still further. In 1826, a third edition of it appeared. In 1809, he was made professor of the newly erected gymnasium at Münich. Here his work on the supposed difference between North and South Germany (1810) excited much hostility against him. He was appointed teacher, in history and literature, to the royal princesses, and founded a seminary for the instruction of teachers, which, in 1812, the government united with the academy. A periodical was connected with this seminary, entitled *Acta Philog. Monacens.* He began also his translation of Pindar, which appeared in 1820 with the original text, and with illustrations. In 1813 and in 1814, he visited Paris and London, where he devoted much attention to works of ancient sculpture. In 1822 and 23, he travelled in Italy, chiefly with a view of studying the fine arts and archæology. In 1826, he published an account of his journey, and wrote on various archæological subjects in the Transactions of the academy of Münich, chiefly on the epochs of the fine arts among the Greeks. He took a warm interest in the intellectual regeneration of the Greeks, through the *Hetaireia* (q. v.), originally a purely literary society; and at a later period, when the Greek insurrection broke out, he endeavored to aid it, but was prevented by the government. He undertook a journey to Greece in 1831, after prince Otho, the son of his king, had been elected as sovereign of that country. In 1826—27, he published his work On Learned Schools (2 vols., Stuttgard).

THIRD ESTATE. (See *Tiers État.*)

THIRST; the sensation which attends the desire to drink. During the operations of the animal functions, a great quantity of moisture is consumed, the loss of which must be supplied. Thirst, and the feeling of languor by which it is accompanied, are the voice of nature, calling upon the animal to supply the place of the lost moisture by drinking. The sensation of thirst is not always equally strong; but it depends partly upon the food and the prevailing temperature. In summer, when the process of perspiration is active, and the consumption of moisture consequently great, all animals drink more than in winter. Cold-blooded and inactive animals bear thirst much longer than warm-blooded and lively animals. Madness, and the consequent lassitude and exhaustion, are produced by long and excessive thirst no less than by hunger. Plants also suffer from thirst, and wither under its influence. An outward application of moisture is found to diminish thirst; and sailors have preserved their lives by bathing in the sea. The vicious habit of frequently drinking, and the desire of tasting some liquids, such as brandy, wine, &c., cause the developement of a morbid feeling, which is mistaken for thirst, to which it has a great analogy.

THIRTY-NINE ARTICLES. (See *England, Church of.*)

THIRTY TYRANTS. (See *Attica*, and *Peloponnesian War.*)

THIRTY YEARS' WAR (from 1618 to 1648). The remote causes of this war are to be found in the reformation of the sixteenth century and in the "religious peace" of Augsburg, 1555. The Catholics and Protestants in Germany had long viewed each other with equal jealousy: nothing but mutual fear had prevented them from breaking out into open hostilities. By the union of the Protestant princes, formed in 1608, in opposition to which the Catholics established their league in 1609, the fire already kindled, and smouldering beneath the ashes, received fresh strength, till it at last burst into a flame in Bohemia. Here the Protestant doctrines, which had gradually spread even through the hereditary states of Austria, had obtained greater freedom and privileges by the *Majestätsbrief*, an edict extorted from Rodolph II in 1609. By virtue of this edict, the towns and the nobles had the right of building churches and schools. In the little town of Klostergrab, therefore, and in Braunau, the Protestant vassals, contrary to the wishes of their feudal lords, built churches in the reign of Matthias, at whose command the church in Klostergrab was demolished, and that in Braunau was shut up. The Protestants remonstrated with the emperor, but were answered with threats. A report was spread that this answer was composed in Prague, and that the emperor knew nothing of it. May 23, when the imperial council were assembled at the castle in Prague, deputies from the Prostestant estates crowded into the hall, armed, and demanded whether any of the counsellors had a part in the composition of the imperial ordinance. Two of the counsellors, already odious to the Protestants (Von Martinitz and Slawata, with the secretary Fabricius), giving sharp answers to the deputies, were thrown into the dry moat of the castle, but escaped nearly unhurt. The Protestants then took possession of the castle, drove away the Jesuits, who were accused, by the Bohemians, as the authors of the oppressions complained of, and took up arms under the ambitious count of Thurn. The Union sent an auxiliary corps into Bohemia, under the command of the brave Ernest, count of Mansfeld. The emperor gave orders for his army to invade Bohemia. In the midst of these troubles Matthias died (March 10, 1619). He was succeeded by Ferdinand II, who was chosen emperor, August 28, 1619. The Bohemians, knowing his hostility to Protestantism, had already (August 17) declared his title to the Bohemian crown void, and conferred it upon the palatine, Frederic V, who, after some hesitation, finally accepted it, chiefly through the urgent persuasion of his ambitious wife, the daughter of James I, of England. But the very next year, the great victory of the troops of the League, on the Weissenberg, near Prague (November 3, 1620), which was followed by the flight of the new king, put an end to the Bohemian rebellion, and crushed the Protestant cause in that quarter. Ferdinand now declared Frederic V under the ban of the empire; and the ruin of that prince became inevitable, when, in consequence of the treaty of Ulm (July 3, 1620), the Union was dissolved. The Palatinate was conquered by the Spanish and Bavarian troops, although count Ernest of Mansfeld, and duke Christian of Brunswick, hastened to its assistance with their troops, who supported themselves by plunder. But the bestowing of the dignity of elector palatine on Maximilian of Bavaria (1623), a partisan of the emperor, by which the Catholics gained the ascendency in the electoral college, and the advance of the Bavarian general Tilly to the frontiers of the circle of Lower Saxony (where he still kept his army, though, in 1624, there was no enemy in the field, deprived the Protestants of their churches, drove away the Lutherans, and committed other acts of violence), at last awakened the Protestant princes of this circle from their slumber. They entered into a confederacy with the king of Denmark, and Christian IV, duke of Holstein. On the other hand, the imperial forces were considerably augmented by the army of Wallenstein, afterwards duke of Friedland, raised at his own cost, which marked its course with the most frightful devastation. The king of Denmark was entirely defeated by Tilly, at Lutter, on the Barenberg, in 1626, and, at the disgraceful peace of Lübeck, 1629, compelled to promise that he would never again interfere in the affairs of the German empire. The emperor was now more powerful than ever, and the Protestant cause was in extreme jeopardy. A proof of this was the edict of restitution of 1629, by which the Protestants were to give up all the church estates, which they had confiscated since the religious peace of 1555. At this crisis appeared Gustavus Adolphus, king of Sweden, to whom Stralsund had applied for protection, in 1628, when besieged by an army of 100,000 men under Wallenstein, and from whom the alarmed Protestants now sought assistance. Full of zeal for his religion, exasperated by various injuries received from the emperor, this prince landed in Pomerania, June 24, 1630, with an army of 30,000 men. He drove the imperial troops before him wherever he appeared. He was unable, indeed, to prevent the capture and destruction of Magdeburg, by Tilly, in 1631; but, having increased his strength by an alliance with France and several German princes, some of whom were compelled to accede to it, as the princes of Brandenburg and Saxony, and having destroyed Tilly's army in the battle at Leipsic (September 7, 1631), he reduced the emperor and his allies to great straits, by his rapid movements, aided by the victories of his generals and confederates in Westphalia and Lower Saxony, and by the invasion of Bohemia by the Saxons. Gustavus delivered the Protestants in Franconia from the imperial army, conquered Mentz, made himself master of the Palatinate, and pushed into Bavaria. At the same time, the elector of Saxony had captured Prague. The emperor feared that Vienna itself would be besieged. Tilly had died in Bavaria. Such was the situation of the Protestant affairs in Germany. But when Wallenstein (who, at the urgent instance of the diet assembled at Ratisbon, had been dismissed for his acts of extortion and plunder) again appeared on the stage, with a formidable army and high military renown, Gustavus found himself under the necessity of evacuating Bavaria. The two armies met at Noremberg; but Wallenstein, not finding it expedient to risk a battle, remained in his intrenchments, on which an ineffectual assault was made by Gustavus. They at last came to a bloody battle at Lützen, in Saxony (November 6, 1632), in which the king gained the victory at the expense of his life. His death would have been attended with the most disastrous consequences to the Protestants, had not his high-chancellor, Oxenstiern, by his skilful negotiations, effected the alliance of Heilbronn among the German princes, while the brave duke Bernard of Weimar and Gustavus Horn made the Swedish arms triumphant through almost all Germany—a result not a little promoted by the ambiguous behavior of Wallenstein, who, having retired to Bohemia in 1634, was charged with treason and put to death by emissaries of the emperor. But the aspect of things suddenly changed again at the bloody battle of Nördlingen, in 1634. The elector of Saxony united himself, at the peace of Prague, in 1635, with the emperor against Sweden (on which occasion Saxony was indemnified with the possession of Lusatia). Several states of the empire concurred in this peace, so that the Swedes were obliged to seek protection in a closer union with France. By the successes of Bernard of Weimar on the Upper Rhine, and of Baner, who, in 1638, had invaded Bohemia, they again became formidable. Torstenson, with astonishing rapidity, marched from one end of Germany to the other, made Austria tremble, humbled the king of Denmark, and filled up the measure of Swedish glory, which Wrangel continued to maintain till the end of the war. It was not till after the death of Bernard, duke of Weimar (1639), that France took a serious part in this war; and, though at first her armies had done but little, and met with a severe defeat at Duttlingen, in 1643, they afterwards gained brilliant victories, under Condé and Turenne, over the imperial and Bavarian troops. At length, the conquest of Prague, by the Swedish general Königsmark (July 25, 1648), compelled Ferdinand III (Ferdinand II had before died, in 1637) to conclude the peace, which, after seven years' negotiation, at Münster and Osnabrück, in Westphalia, was signed October 24, 1648. (See *Westphalia, Peace of*, and *Germany*.) For more information, see Schiller's *History of the Thirty Years' War:* Woltmann's *History of the Peace of Westphalia* (2 vols.) serves as a continuation of Schiller. A good history of this war is yet a desideratum. It spread from one end of Germany to the other; and, after its conclusion, this country, wasted by fire, sword and plague, was a scene of desolation and disorder. A bad currency and a deficiency of laborers brought on great scarcity. The art of war was the only thing that had gained any thing, principally by the genius of Gustavus Adolphus, who made an era in military tactics, and was the first who had a train of artillery in his army.

Thisbe; a beautiful Babylonian maiden, whose memory has been preserved by her unhappy passion for Pyramus. The parents of the lovers opposed their mutual wishes; and they were able to keep up a communication with each other only by conversing through a hole in the wall, which separated the contiguous houses of their parents. Once, however, they agreed to meet at the tomb of Ninus, without the city. Thisbe arrived first, but was terrified at the unexpected sight of a lioness, and hid herself in a neighboring cave. In her haste, she dropped her mantle, which was rent by the lioness. Pyramus now reached the spot, and, convinced, by the appearance of the torn garment, that Thisbe had fallen a prey to the monster, he threw himself in despair upon his sword. Thisbe, on returning, and finding her lover weltering in his blood, stabbed herself with the same sword. Both were interred in the same grave, at the foot of a mulberry tree, whose white berries became red.—This Thisbe must not be confounded with the nymph *Thisbe*, from whom the town of the same name, in Bœotia, was called.

Thistle (*cnicus*). These rough, spiny plants are conspicuous objects in northern climates. The stem is thick and herbaceous; the leaves more or less pinnated, and toothed, and beset with spines. It belongs to the *compositæ;* and the flowers are disposed in large, dense heads, surrounded with a close, scaly, and usually spiny involucre, and are of a purple color, with a few exceptions. The species are not so numerous in the U. States as in Europe; but we have two, that have been introduced from that continent, very abundant in certain districts. One of these, *C. lanceolatus*, is very common by road sides, and in waste places, but has not hitherto attracted much attention as a noxious weed. The other, *C. arvensis*, improperly called *Canada thistle*, is the most troublesome weed of northern climates. It has overrun large tracts in the Northern, and is now getting a footing in the Middle States. It is never found, however, in very sandy, gravelly or peaty soils, but generally in such as are loamy and dry. It is nearly impossible to eradicate it, on account of the distance to which the roots penetrate: an instance is given of the descending roots having been dug out of a quarry, nineteen feet in length; and it has been found to shoot out horizontal roots or stolons in every direction, some eight feet in length, in a single season. At the same time, its numerous downy seeds, if suffered to ripen, are dispersed by the wind in every direction. Laying land down to grass, keeping it in that state seven or eight years, and, during the whole time, pulling up every shoot as soon as it appears, is the most effectual mode hitherto devised of keeping it under. Formerly, it was pulled when beginning to come into flower, and given as food to horses and cows. The ashes yield a very pure vegetable alkali. It is readily distinguished by the small size of the flowers.

Thistle, Knights of, or Knights of St. Andrew; according to some writers, instituted by Achaius, king of Scots, in memory of an appearance in the heavens of a bright cross, resembling that whereon St. Andrew suffered martyrdom, seen by Achaius, the night before he gained a victory over Athelstan, king of England. This order, after having much declined, was revived by James II of England, in 1687, and again by queen Anne, in 1703. The motto is "*Nemo me impune lacessit.*"

Thistlewood, Arthur, memorable for his concern in the political commotions which disturbed England after the restoration of regal government in France, was the son of a farmer in Lincolnshire, and was born in 1772. He obtained a lieutenant's commission in the supplementary militia in 1797, and, soon after, married a young lady with a considerable fortune. He then resided at Bawtry, in Yorkshire; but, his wife dying in about eighteen months, he went to Lincoln, where he abandoned himself to dissipation, and, having squandered his property at the gaming table, was obliged, at length, to take refuge in London. There he remained some time, making, however, occasional voyages to America and France. In the latter country he connected himself with the partisans of anarchy and revolution, and probably contracted that spirit of discontent which influenced his future conduct. After the peace of Amiens, he returned to England, and improved his circumstances by a second marriage. But he had now become a gambler by profession; and, having associated himself with other persons of desperate character, he engaged in schemes which drew on him the notice of government. When the riots in Spa fields took place, he was arrested, with Watson and others; and the proceedings against him on that occasion only served to irritate his passions, and prompt him to such outrageous behavior towards lord Sidmouth, then secretary of state, as occasioned his subsequent detention in prison for a considerable time. On his liberation, he gave way to the suggestions of rage and despair, and became the principal agent in the memorable Cato street conspiracy, the object of which was to murder several members of the administration at a cabinet dinner, and excite an insurrection in the city of London. This absurd scheme was betrayed by a man employed as a spy by the ministry, and the insane projectors were arrested, just as they were about to proceed to the execution of their purpose. Being tried and condemned as a traitor, Thistlewood, with his coadjutors, suffered the sentence of the law, May 1, 1820.

Thomas Aquinas. (See *Aquinas.*)

Thomæans. (See *Christians of St. Thomas.*)

Thomas a Kempis; that is, *Thomas of Kempen*, or *Kampen*, a small town in the archbishopric of Cologne, where he was born in 1388, though, according to some accounts, Kampen in Overyssel was his birthplace. His family name was Hamerken or Hämmerlein (Malleolus, or Hammer). His parents, who were poor, designed him, from an early age, for the church; and he received instruction and assistance from Florentius, prior of a monastery of regular canons, at Deventer, in Overyssel. With such an example and such lessons, the youth was led to devote himself to the rigorous observance of monastic practices; and, at the age of twenty, he retired, with a strong inclination for the monastic life, to the Augustine convent on mount St. Agnes, near Zwoll, where, after five years of probation, he took the vows. Here, distinguished for the apostolical simplicity of his character, and Christian purity of his life, he died in 1471, superior of the convent. His works, some of which have not yet been printed, were first published in 1494 (folio). The best edition is that of the Jesuit Sommel (1600, 4to.), which is not, however, complete. His printed works are all in Latin, and consist of sermons, discourses, exhortations, and other ascetic treatises, hymns, prayers, and some lives. His *Soliloquia Animæ*, his *Hortulus Rosarum*, and his sermons, have always held an honorable rank among the mystical writers. His *De Imitatione Christi Libri IV*, the most celebrated of his works, has been translated into all modern languages, and has been republished more than a thousand times. It penetrates so deeply into the genuine spirit of Christianity, that it has been received with equal favor by the most opposite sects.

Thomas, Antoine Léonard, an ingenious French writer, born at Clermont, in Auvergne, in 1732, was placed, in his tenth year, at the college of Duplessis in Paris, where he soon distinguished himself, and, at the age of fifteen, obtained a prize. Although designed for the law, his inclinations led him to the cultivation of polite literature, and he became professor at the college of Beauvais. In 1776, he was employed as secretary to the duke of Praslin, minister of foreign affairs, afterwards held the same post in the service of the duke of Orleans, and died at Chateau d'Oullins, in 1785. Thomas was a man of generous and elevated feelings, and an excellent writer. The best known of his works are his *Éloges*, or Eulogies of Distinguished Men, several of which obtained the prize of the academy. They are in general characterized by vigorous eloquence, boldness of thought, and a warm zeal for the interests of humanity, virtue and knowledge; but they are not always free from exaggeration of style and expression, and too great an effort after effect. The best of his eulogies are those on Descartes, Sully, marshal Saxe, and the dauphin. His *Essai sur les Éloges* (2 vols., 1773) acquired him much reputation, on account of its brilliant imagery, strong and just thought, and interesting views of ancient and modern orators. His *Essai sur les Femmes* is less esteemed. Among his poems, the best are his *Epître au Peuple*, *Ode sur le Temps*, and *Poëme de Jumonville*.

Thomas, Christians of St. (See *Christians of St. Thomas*.)

Thomas, St., also called *Didymus* (the former being the Hebrew, the latter the Greek word, signifying *twin*), one of the twelve disciples, was born in Galilee, of a family of fishermen. He followed Jesus with the most devoted attachment, during the three last years of his ministry; and the scene with his master, after the resurrection, is well known. He is said to have preached the gospel among the Parthians; but the particulars of his life are unknown. Tradition relates that he suffered martyrdom at Calamine, which Tillemont conjectures to be Calamone, in Arabia. There are some writings attributed to him, but they are spurious.

Thomas, St.; the principal of the Virgin isles, in the West Indies, belonging to Denmark; lon. 64° 55′ W.; lat. 18° 22′ N. It is eleven miles long, and two broad; population in 1815, 5050; whites, 550; free blacks, 1500; slaves, 3000. It abounds with potatoes, millet, manioc, fruits, sugar and tobacco. It has a safe and commodious harbor. The town consists chiefly of one long street, at the end of which is the Danish factory. Most of the houses are of brick, being built and tiled in the Dutch fashion, yet but of one story. The trade of this small island, particularly in time of peace, is very considerable.

Thomas, St.; an island in the Atlantic, near the coast of Guinea, situated on the equinoctial line, about forty miles long, and thirty broad; lon. 6° 55′ E. The climate is hot, moist, and unwholesome to Europeans. The soil is fertile, and produces the fruits of the climate in great abundance. The island is well watered. In the centre is a high mountain, covered with wood and fruit trees, and wrapped in almost perpetual clouds, from which descend a number of rivulets, which water the sugar-cane plantations in the valleys at the bottom. The ecclesiastical government is in the hands of the bishop, a suffragan to the archbishop of Lisbon. Chief town, Povoacon, with 700 houses.

Thomasius, or Thomasen, Christian, a distinguished German philosopher and critic, was born at Leipsic, in 1655, studied at Frankfort on the Oder, and, returning to Leipsic in 1679, delivered philosophical and law lectures there. But his innovations on established usages (to the general astonishment, he wrote the program of his lectures in 1688 in the vernacular tongue), and his freedom of thinking, raised him many enemies, and he was finally obliged to leave the country. In 1690, he went to Halle, where he took an active part in establishing the university, in which he became professor of law, and, afterwards, head of the university, and remained there till his death, in 1728. Thomasius was the first to use the German language in university lectures; and he exerted his influence to procure the abolition of torture, of trials for witchcraft, and of restraints upon freedom of thought. He contributed to introduce a more rational and philosophical criticism; and his services, in shaking the doctrines of the Aristotelian scholastics, were of the highest importance. Among his works, the principal are, Free Thoughts, or Monthly Dialogues; History of Wisdom and Folly; and Rational and Christian Thoughts on Various Subjects of Philosophy and Jurisprudence, which involved him in numerous controversies with men of narrow and bigoted minds. Luden has written a life of Thomasius (Berlin, 1805).

Thomaston; a post-town of Lincoln county, Maine, on the east side of the river St. George, and on the west side of Penobscot bay, seven miles south of Warren, thirty-seven east of Wiscasset; population in 1830, 4221. It has more than doubled in population within the last ten years. The principal business of the town consists of the lime trade. Very large quantities are burned here, and shipped to all parts of the country.

Thomists. (See *Aquinas*, and *Scholastics.*)

Thompson, Benjamin. (See *Rumford.*)

Thompson, Charles, secretary of the American revolutionary congress, was born in Ireland, in November, 1729, and was about eleven years of age when he arrived in America. He left his native country with his father and three elder brothers: the former died on the passage, and the youths were turned ashore by the captain, at New Castle, with but very slender means of providing for themselves in a strange land. Charles, however, was furnished by one of his brothers with money enough to enter the school of doctor Allison, at Thunder hill, in Maryland. In those times, books were very rare, so that a single lexicon served the whole school. It is related, that one of the boys having brought from Philadelphia a volume of the Spectator, it was read by Thompson with such delight, that, upon his school-fellow's telling him that a whole set of the work was to be sold at a bookstore in that place, he set off the next day, without asking leave, walked to Philadelphia, and, having possessed himself of the treasure, returned to school without further delay. At this seminary, he obtained a knowledge of the Greek and Latin languages, mathematics, and other branches of study, which enabled him, whilst a very young man, to keep the Friends' academy in Philadelphia. He afterwards married, and went into business in that city. His principles were early of a most republican cast; and it is even asserted, that he began the opposition to the stamp act in Pennsylvania. Immediately after the first congress had assembled in Philadelphia, he was chosen their secretary. The duties of this office he continued to discharge with great reputation to himself and advantage to the cause, until the close of the war. His well-known integrity procured implicit credit for every thing published with his name. After the adoption of the new constitution, he assisted at the organization of the new government, and was the person deputed to inform Washington of his nomination to the presidency. Washington wished much to retain him in its service, but, in his own words, "the suitable hour for his retirement was now come." During that retirement, he published a translation of the Bible, and a synopsis of the New Testament. His death occurred in 1824. His disposition was remarkably good and cheerful. He possessed a great share of natural sagacity. He was a zealous republican of the old school, and strictly moral and religious. The Indians, into one of whose tribes he was adopted, gave him a name signifying "the man of truth."

Thomson, James, a distinguished British poet, was born in 1700, at Ednam, near Kelso, in Scotland, being one of the nine children of the minister of that place. He was sent to the school of Jedburgh, where he early discovered a propensity to poetry, which drew the attention of the neighboring gentry. He was removed to the university of Edinburgh, and induced, by the wishes of his friends, to study divinity; but he soon gave up theological studies, and paid an exclusive attention to literature. After acting some time as a private tutor to lord Binning, he quitted the university, and went to London, where his Winter was purchased by Millar for a very trifling consideration, and published in 1726, with a dedication to sir Spencer Compton. Its merits, however, were not discovered until it accidentally caught the eye of Mr. Whately, who brought it into general notice. It led to the author's introduction to Pope. In 1727, he published his Summer, which he addressed to Bubb Doddington, his Poem to the Memory of Sir Isaac Newton, his Britannia, and, in 1728, his Spring, and, in 1730, his Autumn. He had previously brought on the stage his tragedy of Sophonisba; and not long after, he was selected as the travelling associate of Mr. Talbot, with whom he visited the continent. On his return, he was rewarded with the post of secretary of briefs by the lord chancellor Talbot, which was nearly a sinecure. About this time, he published his poem of Liberty, with the cool reception of which he was much disappointed. Soon after the death of lord chancellor Talbot vacated Thomson's office, and lord Hardwick, who succeeded to the seals, gave it to another. An introduction to Frederic, prince of Wales, produced him a pension from that prince of £100 per annum. In 1738, he produced a second tragedy, entitled Agamemnon, which was coldly received, and a third, entitled Edward and Eleanora. In 1740, he composed the masque of Alfred, in conjunction with Mallet; but which of them wrote the song, since become national, of Rule Britannia, has not been ascertained. In 1745, his most successful tragedy, entitled Tancred and Sigismunda, was brought out and warmly applauded. The following year produced his Castle of Indolence. He now obtained the place of surveyor-general of the Leeward islands, but soon after (1748) died of a cold caught on the Thames, in the forty-eighth year of his age. He was buried at Richmond, and a monument was erected to him in Westminster abbey in 1762, with the profits of an edition of his works. He left a tragedy entitled Coriolanus, which was acted for the benefit of his family. Thomson was large and ungainly in person, and somewhat heavy in deportment, except among intimate friends, by whom he was much beloved for the kindness of his heart. He was remarkably indolent, and too much disposed to indulge in the grosser pleasures of sense. His Seasons abounds in sensibility and beauty of natural description. His diction, although occasionally cumbrous and labored, is always energetic and expressive. His Castle of Indolence is the most spirited and beautiful of all the imitations of Spenser, both for moral, poetical and descriptive power. His tragedies possess little dramatic interest. (See Johnson's *Lives of the Poets*.)

Thomson, doctor Thomas, an eminent British chemist, is a native of Edinburgh. His first separate published work, which came out in 1800, was a translation, in three volumes, of Fourcroy's Chemistry, with Notes. This was succeeded by a System of Chemistry (4 vols., 8vo., 1802), which has passed through many editions, and is become one of the standard works on chemical science. In 1810, he published the Elements of Chemistry (8vo.); in 1812, the History of the Royal Society of London (4to.); in 1813, Travels in Sweden; and in 1830, Outlines of the Science of Heat and Electricity. His communications to the Philosophical Transactions, Nicholson's Journal, and other scientific periodicals, are numerous and highly valuable. A still greater number of his papers may be found in the Annals of Philosophy, a monthly publication, which he established in 1812. He conducted the Annals till 1818, when, on his being appointed Regius professor of chemistry at Glasgow (which compelled him to prepare and deliver a laborious course of lectures), he confided the task of editorship to his friends, doctor Bostock and Mr. Arthur Aikin. In 1819, he resumed his office of editor, but finally relinquished it, in 1826, to Mr. Richard Phillips, a scientific member of the society of Friends. Doctor Thomson is a member of the London and Edinburgh Royal Societies, of the Linnæan, Wernerian, and geological societies, and of the imperial academy of Petersburg.

Thomsonite; a mineral which, until lately, was regarded as a variety of mesotype, from which, however, it differs essentially in respect to cleavage, the form of its crystals, and its chemical composition. It occurs, generally, in masses of a radiating structure, in the cavities of which, crystals are occasionally observed, whose form is that of a right square prism. It is colorless, and translucent in the mass; but small fragments are transparent. It possesses considerable lustre, approaching to pearly, is brittle, and scratches fluor. Its crystals do not cleave parallel to the terminating planes of the prism. It consists of

Silex,	36.80
Alumine,	31.36
Lime,	15.40
Magnesia,	0.20
Peroxide of iron,	0.60
Water,	13.00

Before the blow-pipe, it swells, curls, and becomes snow-white and opaque, but does not melt. When exposed to a red heat, it becomes opaque, very white, and shining like enamel: the edges are rounded, but it does not altogether lose its shape, but loses 13 per cent. It occurs at Kilpatrick, near Dumbarton, Scotland, also in Nova Scotia, in trap.

Thor, or **Tir**; the Jupiter of the Germans; the god of thunder. He was represented as an old man with a long beard, a crown with diverging rays, dressed in a long garment, holding in his right hand a sceptre with a lily, and having around his head a circle of stars. Sacrifices were offered to him under oaks; hence the German name *thunder-oak*. Boniface (q. v.) felled the Thor-oak near Geismar. *Thursday* (day of Thor) has its name from him.

Thora. (See *Tora.*)

Thorium. In the year 1815, Berzelius supposed that he had discovered a new earth among the ingredients of the Gadolinite, to which he gave the name *thorina*; but he afterwards ascertained that this substance was a *phosphate of yttria*. In 1828, he received from professor Esmark of Christiania, in Norway, a black mineral, like obsidian, and having a specific gravity of 4.63. To this mineral Berzelius gave the name of *thorite*. It was discovered in sienite, in the isle of Lör-ön, near Brevig, in Norway, and is very scarce. The mineral has the following composition:—

Thorina,	57.91
Lime,	2.58
Peroxide of iron,	3.40
Deutoxide of manganese,	2.39
Magnesia,	0.36
Peroxide of uranium,	1.61
Protoxide of lead,	0.80
Oxide of tin,	0.01
Silex,	18.98
Water,	9.50
Potash,	0.14
Soda,	0.10
Alumine,	0.06
Undecomposed matter.	1.70
	99.54

To obtain thorina from this mineral, it was reduced to powder, and digested in muriatic acid. The muriatic solution, after the separation of the silex, was precipitated by caustic ammonia, which threw down the thorina, still contaminated by various impurities. By a variety of operations, it was separated from these, with the exception of a small quantity of oxide of manganese, which it was impossible to get rid of. When mixed with charcoal powder, and heated to redness in a porcelain tube, while a current of dry chlorine is made to pass over it, chloride of thorium is obtained. When this chloride is heated with potassium, a slight detonation takes place, and a dark-gray matter is obtained. When washed with water, a little hydrogen gas is given out, the chloride of potassium dissolves, and the thorium is left in a powder, having an iron-gray color and metallic lustre. Like aluminum, it appears to be malleable. It is not oxidized by water, even when assisted by heat. When gently heated in the open air, it takes fire, and burns with very great splendor, being converted into thorina. The earth thus formed is snow-white, and exhibits no traces of fusion, notwithstanding the very high temperature during the combustion. When thorium is put into dilute sulphuric acid, a strong effervescence, with the disengagement of hydrogen gas, takes place at first; but this soon stops, even though the liquid be heated. Nitric acid acts upon thorium with still less energy than sulphuric acid. But muriatic acid dissolves it rapidly, with the evolution of hydrogen gas. Thorium is not acted on by the caustic alkalies. The only compound which thorium seems capable of forming with oxygen is thorina. To obtain this substance in the state of a hydrate, we have only to add caustic potash to the solution of thorina in an acid. Hydrate of thorina is gelatinous, and contracts while drying. When moist, it dissolves readily in acids; but it is much less soluble when dry. The salts which it forms have a styptic taste. This hydrate is insoluble in the caustic alkalies; but it dissolves in the carbonates. It is more soluble in cold than in hot carbonate of ammonia. Thorina is distinguished from the other earths by the following property: its sulphate is precipitated from its solution by raising it to a boiling temperature, and dissolves again, though slowly, in cold water. The salts of thorina are not of sufficient importance to require description.

Thorlacius (Thorlaksen), Skule and

Börge; father and son. *Skule Thordsen*, the former, was born in Iceland, in 1741, and died at Copenhagen, in 1815, where he was rector of the Latin school. Besides his participation in the *Heimskringla*, his preface to the first part of the Sæmundic Edda, and some short Essays upon Thor, two Runic stones, &c., he was the author of a valuable work entitled *Antiquitatum Borealium Observationes* (Copenhagen, 1778—99), and of commentaries upon the *Hákonar-Quida*, the *Grotta-Savngr*, the *Havstlavng*, &c. The son, born at Colburg, in 1775, professor of theology at Copenhagen, has also thrown much light on northern antiquities and literature, by several works: he likewise furnished the means for completing the publication of the *Heimskringla*, and of the Sæmundic Edda, which had been delayed for thirty years.

Thorn; a town in the Prussian government of Marienwerder, province of West Prussia, on the Vistula, about 90 miles from its mouth; 100 miles northwest of Warsaw; lon. 23° 48′ E.; lat. 53° 1′ N.; population, 9000. It consists of the old and new towns, separated from each other by a wall and ditch; both surrounded by a mound and moat. Thorn was formerly considered a place of great strength. It contains one Lutheran and three Catholic churches, two convents, a Catholic gymnasium, and a military academy, and some manufactures; but its commerce is less than formerly, the Vistula having become more shallow, so that vessels of burden can no longer come up to the town. (See *Vistula*.) It was formerly distinguished among the Hanse towns. Copernicus (q. v.) was born here in 1472.

Thorn Apple. (See *Stramonium*.)

Thornton, Bonnell, a miscellaneous writer of genuine humor, the son of an apothecary, was born in London, in 1724, and studied at Oxford. In 1750, he studied physic, but soon after united with the elder Colman in the establishment of the amusing periodical paper entitled the Connoisseur. Assuming literature as a profession, he was also a profuse contributor to magazines, newspapers, and all the periodicals of the day, chiefly in the light and humorous way. He projected a ludicrous exhibition of sign paintings, which satirized temporary objects, events and persons, and amused for a season, and wrote a burlesque Ode for St. Cecilia's Day. In 1766, in conjunction with Warner and Colman, he published two volumes of a translation of Plautus, afterwards completed in five. He died in his forty-seventh year.

Thorough Bass. Thorough bass is the art by which harmony is superadded to any proposed bass, and includes the fundamental rules of composition. This branch of the musical science is twofold, theoretical and practical. Theoretical thorough bass comprehends the knowledge of the connexion and disposition of all the several chords, harmonious and dissonant, and includes all the established laws by which they are formed and regulated. Practical thorough bass is conversant with the manner of taking the several chords on an instrument, as prescribed by the figures placed over or under the bass part of a composition, and supposes a familiar acquaintance with the powers of those figures, a facility in taking the chords they indicate, and judgment in the various applications and effects of those chords in accompaniment.

Thoroughwort. (See *Boneset*.)

Thorwaldsen, Albert, since 1826, president of the academy of St. Luke at Rome, the most distinguished of living sculptors, who has shed a new lustre upon the fine arts, and whose works would be considered as masterpieces in any age, was born about 1772, at Copenhagen, but has lived for about thirty-three years past in Rome. His father, a native of Iceland, was a poor stone-cutter and carver. He observed the talents of his son, and placed him at the school of design in the academy of fine arts at Copenhagen, where he gained the first prize of the academy, with which is connected a small pension, to enable the successful competitor to study for four years in Rome. Thorwaldsen, being without any pecuniary means of his own, went to Rome in a Danish frigate, by way of Gibraltar, Algiers, Malta and Naples. He studied zealously; but, as the expenses of a sculptor in Rome are considerable, he could not, in the beginning, show his talent in great works. After the cessation of his pension, he was in very straitened circumstances. But Zoëga (q. v.) became his friend and adviser; and, conscious of his powers, he took courage, and made the model of a Jason, at the moment when he has just succeeded in gaining the golden fleece. The hero is represented in an attitude of calm grandeur, resting on his right foot, his head inclined towards the left side; the fleece hangs negligently over his left arm, whilst the spear rests in his uplifted right: the figure is naked, excepting the parts covered by the helmet, shoulder-belt and sandals. This model met with universal applause, and was one of the objects shown to every stranger. Hope, of Amsterdam, commissioned the artist to execute the colossal figure in marble. This was the beginning of his reputation; and he now proceeded to other works of the highest merit. His basso-relievo, Achilles, sitting with averted face and suppressed ire, while the heralds of Agamemnon are carrying away the reluctant Briseis, delivered to them by Patroclus, may be put by the side of the finest bassi-relievi of the ancients. His colossal Mars, in a standing posture, resting on his reversed lance, and seizing with his right hand the olive-branch, excels even the Jason, and is considered the finest modern work in this style. This Mars, and the Adonis, commended by Canova as a masterpiece, were finished in 1808. His statues, previously made somewhat under the natural size, such as Venus, Apollo, Bacchus, Cupid, Psyche, Hebe, Ganymede, Mercury killing Argus, &c., are well known, as he has often repeated them in marble. They have few equals, and, as well as his other works, have been engraved, by Riepenhausen and Mori, in outlines, of which thirty appeared at Rome in 1811. His four relievi for the sides of a baptismal fount, are distinguished for invention and grouping. They are a baptism of Christ, a Madonna with the infant Jesus and the child John, a Christ blessing the little children, and a group of angels. These, and his four medallions for the public hall in Copenhagen, are models of a complete cycle in sculpture. For the front of the new cathedral in Copenhagen he has made a St. John preaching in the desert, in basso-relievo; for the niches of the vestibules, the great prophets; for the frieze, Christ carrying the cross; for the interior of the church, the twelve apostles; for the high altar, the Savior himself. Part of these are already executed in marble. The greater part are still in model. Thorwaldsen in these works has strikingly accomplished the difficult task of representing Christian subjects in sculpture—a task much more difficult than that which Michael Angelo undertook in his Moses, because the power and vigor, predominant in the character of the Hebrew prophet, are much better adapted to the plastic art than the deep feeling of Christ, filled with the idea of revealing a future world, which is more proper for painting. Among the most beautiful productions of Thorwaldsen are the three Graces, models of calm, poetic beauty, with nothing of the modern and piquant, from which even Canova's Graces are not quite free; his lovely allegorical figures, Day and Night, and the frieze in one of the rooms of the papal palace on Monte Cavallo, in basso-relievo. It has been copied in *terra cotta* (q. v.); also his truly poetical figure Hope. After these, he made two not less beautiful Caryatides, of the size of life, and bassi-relievi for the tomb of the young Bethmann of Frankfort on the Maine, who died in Florence. Among his other bassi-relievi are a Bacchus letting Cupid drink out of his cup; Minerva placing a butterfly on the head of the human figure made by Prometheus; Cupid holding up to Venus his little hand, stung by a bee; Hygeia giving drink to the serpent of Æsculapius from her cup; Cupid endeavoring to restore consciousness with the touch of his arrow to the fainting Psyche; the Muses dancing, to the sound of Apollo's lyre, around the Graces. Young male beauty was never conceived or executed more perfectly than in his Shepherd. The king of Denmark conferred on Thorwaldsen the order of the Danebrog, and king Joachim of Naples (Murat) the order of the Two Sicilies. Among his recent works is Alexander's triumphal entry into Babylon, in basso-relievo, ordered by Napoleon, and executed in a very short time. It may be called an epic poem in marble. This, with four other fine bassi-relievi, was bought for the castle of Christiansburg. He has also made a Mercury in the act of killing Argus asleep. The restoration of the Æginetic statues (see *Æginetan Style*), excavated in 1811, in Ægina, and bought by the king of Bavaria, has been confided to him. He has ceased to make portrait busts, though very high prices have been offered for them. He has lately made two candelabras, from the description which Pausanias gives of those in the temple of Jupiter, in Athens. For the city of Warsaw he made the model of the colossal bronze statue of Copernicus, which was first exhibited to the public May 11, 1831—one of the noblest statues in existence—and an equestrian figure of Poniatowski at the moment of his leaping into the Elster, after the battle of Leipsic. He also made the monument of Pius VII, in St. Peter's, which is distinguished by simplicity, and the bust of cardinal Consalvi. (q. v.) His works are often engraved in Rome, and cut in gems. A medal with his head—

an uncommonly fine one—has been struck in Rome. In 1819, he visited Denmark, and returned through Dresden, Warsaw and Vienna to Rome, in 1820. Many monarchs have confided to his taste the selection of designs for monuments. While the works of Canova (q. v.) are distinguished for loveliness and grace, those of Thorwaldsen exhibit a calm conception of true beauty, a simplicity and truth, which seem caught from the ideals on which the works of nature are formed, and which belong only to genius of the highest order. A sculptor like Thorwaldsen can dispense with the minor attractions to which inferior talent resorts to win the favor of the multitude; for the power of such striking genius is felt even by the most inexperienced judges.

Thoth. (See *Egyptian Mythology*, in the article *Hieroglyphics;* also *Hermes Trismegistus.*)

Thou, James Augustus de (in Latin, *Thuanus*), an eminent magistrate and historian, born at Paris in 1553, was the third son of a president of the parliament of Paris. At ten years of age, he was placed in the college of Burgundy, and designed for the church, but was afterwards sent to Orleans, for the study of the civil law, which he further cultivated under Cujacius at Valence. In 1573, he travelled into Italy; and, in 1576, his high character for prudence and ability induced the court to employ him to negotiate with marshal Montmorency for the purpose of preventing a civil war. On the death of his elder brother, in 1579, he dedicated himself to the law, in 1584 was made a master of requests, and, in 1587, having resigned all his previous ecclesiastical engagements, he married. On the revolt of Paris, produced by the violences of the league, he adhered to Henry III, and, after the assassination of the duke of Guise, was principally instrumental in reconciling Henry with the king of Navarre. On the death of Henry III, he hastened from Venice to support his lawful successor, Henry IV, who employed him in several important negotiations, and nominated him principal librarian to the king, on the death of Amyot. In 1594, he succeeded his uncle as *président-à-mortier*, and was afterwards one of the Catholic commissioners at the celebrated theological conference at Fontainebleau, between Du Perron and Du Plessis Mornai. In the regency of Mary de' Medici, he was appointed one of the directors-general of finance, and otherwise employed in nice and difficult matters, in which he rendered himself equally conspicuous by integrity and ability. These various occupations did not prevent him from an assiduous cultivation of literature; and being fond of composition in Latin verse, in 1584 he gave the world a descriptive poem on the subject of hawking, entitled *De Re accipitraria* (On Falconry). He afterwards published other pieces of Latin poetry; but his greatest literary labor was the composition, in the same language, of a voluminous History of his own Times (*Historia sui Temporis*), of which the first part was made public in 1604. To the great discredit of Henry IV, this work was condemned, in submission to the influence of the Catholic leaders, who were nettled at the freedom with which the historian did justice to the Huguenots, and censured the popes, the clergy, and the house of Guise. The history, when finished, consisted of one hundred and thirty-eight books, comprising the events from 1545 to 1607; and as few writers have undertaken a work of this extent with better qualifications for the task, it was accomplished in a manner which has secured the approbation of posterity. Accurately acquainted with the politics, revolutions and geography of modern Europe, the narrative of De Thou is at once copious and exact, while his native candor and love of truth have ensured all the necessary freedom and impartiality. To this work he subjoined Commentaries, or Memoirs of his own Life, composed in the same spirit. In 1601, he lost his first wife, by whom he had no children, and married a second, who brought him three sons and three daughters. The loss of this lady in 1616, together with the calamities which befell the country after the assassination of Henry IV, is thought to have hastened his own death, which took place in 1617, at the age of sixty-four. The most complete edition of the History of De Thou is that published in London, in 1733, by Buckley, in seven volumes, folio.—See Chasles's *Discours sur De Thou* (1824), which divided the prize of the French academy.—His eldest son, *Francis Augustus*, born in 1607, inherited the virtues and intelligence of his father, and was made master of requests and grand master of the royal library. Cardinal Richelieu having discovered that he kept up a correspondence with the duchess de Chevreuse, studiously kept him out of all confidential employment, which, unhappily for himself, threw him into the party of Cinqmars. When that imprudent person therefore was detected in a secret correspondence with Spain, De Thou was apprehended on the charge of not revealing it, and, notwithstanding an able and eloquent defence, was condemned, and sentenced to lose his head. Resolved upon a signal sacrifice, the unrelenting minister resisted all entreaties in his favor, and his execution was irrevocably determined upon. Cinqmars, who was the cause of his ruin, humbled himself before him drowned in tears; but De Thou raised and embraced him, saying, "There is now nothing to be thought of but how to die well." He was beheaded at Lyons in 1642, at the age of thirty-five, universally lamented.

Thousand and one Nights. (See *Arabian Nights.*)

Thousand Legs. (See *Centiped.*)

Thoyras. (See *Rapin de Thoyras.*)

Thrace. At a remote period of history, Thrace, among the Greeks, signified all the northern region beyond Macedonia, whose boundaries were not distinctly known, and which was usually conceived of as being a wild, mountainous land. In a narrower sense, Thrace signified the tract of country lying north of Macedonia, bounded east by the Black sea, south by the Ægean and the Propontis, and extending northwards to Mœsia and the Hæmus. The land was originally, before it was cultivated, in part wild, and inhabited by a fierce and warlike people, among whom were the Getæ: it was, therefore represented as the residence of Boreas, and considered sacred to Mars. The Greeks early settled colonies there, and the country was not destitute of rich meadows and corn-lands: it abounded in mines, and the Thracian horses and riders rivalled those of Thessaly. The principal mountains of Thrace were the Hæmus (Balkan), Rhodope and Pangæus. Among the rivers, the largest and most celebrated was the Hebrus (now *Maritza*). The remarkable places were Abdera, notorious for the stupidity of its inhabitants, which, however, gave birth to Democritus and Protagoras; Sestos, on the Hellespont, celebrated in the story of Hero and Leander; and Byzantium, on the peninsula on which Constantinople now stands. The whole country is now included in the Turkish *ejalet*, or province, Rumelia, or Romania. (q. v.) It was formerly governed by several princes, then subject to Macedonia, and finally formed a Roman province. The tradition of the old Thracian bard, Orpheus (q. v.), shows that music early flourished in Thrace; and, if, as some writers suppose, the Greeks borrowed many of their religious ceremonies and notions from the Thracians, we must conclude that the early inhabitants of the country were not altogether so rude as the ancients often represent them.

Thrale. (See *Piozzi.*)

Thrasimene, or Trasimenus (now *Perugia*); a lake of Italy, near Perusium, celebrated for a battle fought there between Hannibal and the Romans under Flaminius, in which the latter were defeated with great loss, B. C. 217. (See *Hannibal.*) "Such was the mutual animosity of the combatants," says Livy (xxii, 12), "that the earthquake, which overthrew many cities of Italy, turned the course of rapid rivers, and tore down mountains, was not heeded by them." (See an interesting note (35) on the site of the battle, in *Childe Harold*, c. iv. st. 63.)

Thrasybulus; a noble Athenian, who rendered great service to his country, not only as a general in the Peloponnesian war, during which he repeatedly defeated the Spartans, but more particularly by delivering it from the dominion of the thirty tyrants, who, after the close of the war, had been imposed upon the city (B. C. 404) by the victorious Spartans. (See *Attica.*) Thrasybulus, with thirty of his fellow citizens, who, like him, were lovers of liberty, left the city, but did not remain an inactive spectator of the misfortunes of his country. Determined to seize the first opportunity to deliver Athens from the yoke, he occupied a strong place on the borders of Attica, and assembled a small body of forces, with which he bade defiance to the attacks of the tyrants, and even succeeded in capturing the Piræus. Encouraged by this success, the Athenians finally rose, after eight months of slavery, and chased their oppressors from the city. Thrasybulus then restored the old democratical constitution, and with it tranquillity. After having reduced Lesbos, and recovered Byzantium and Chalcis, he lost his life on an expedition against Rhodes, during an insurrection of the inhabitants of Aspendus. He was distinguished above all his countrymen by his ardent love of liberty, his pure patriotism, and his noble disinterestedness.

Three. (See *Triad.*)

Three Kings, The, or The Three Wise Men of the East. The magi spoken of in the New Testament, as guided by the star of Jesus to Bethlehem, and offering him gold, frankincense and myrrh, are called by the Catholic church *kings*; and the festival of Epiphany (q. v.) is called the *feast of the three holy kings*. Bede even gives their names—Gaspar, Melchior and Balthasar. Cologne boasts of possessing their bodies in the cathedral of St. Peter's, where their monument is shown in a chapel built by the elector Maximilian, whence they are called the *three kings of Cologne*. The legend relates that they were baptized after their return to their own country; that, 300 years afterwards, their bodies were transferred to Constantinople by the empress Helena, thence by Eusthathius to Milan, and at last to Cologne by Renatus.

Three Rivers. (See *Trois Rivières*.)

Threnody (from θρηνος, grief, and ὠδη, song); a song of lamentation, which, unlike the narrative, and therefore calmer elegy (q. v.), may be the lyrical expression of the most violent grief or despair, without any soothing mixture.

Thrush. The birds of this genus are hardly distinguishable from the warblers, except by their superior size. They are, however, more frugivorous, living on berries, insects and worms. The bill is strong, compressed at the sides, and the upper mandible is slightly notched near the point. Their colors, in general, are not brilliant, and many of them have spots on the breast. Several are distinguished for their powers of song, or for the delicacy of their flesh. We have seven species in the U. States—the mocking-bird, cat-bird, American robin, and the brown, wood, hermit, and tawny thrushes.

Thuanus. (See *Thou, De*.)

Thucydides, the greatest of all the Greek historians, was born at Athens, B. C. 470. His father's name was Olorus; his mother's Hegesipyle. By the father's side he was connected with Miltiades, and by his mother's was descended from the stock of the kings of Thrace. He received his education at a time when Athens, having conquered her enemies, and acquired distinguished power, was occupied with zeal on the highest objects of human effort. The philosopher Anaxagoras, and the orator Antiphon, early imparted to his mind that manly tone which gives so high a value to his historical works. He was excited to devote himself to historical studies by the applause which the Greek people bestowed upon Herodotus, when he read his delightful narratives at Olympia. When the Peloponnesian war broke out, he was commissioned to raise soldiers for the service of his country. He lived, at that time, upon his estate on the borders of Thrace, and had the superintendence of the gold mines in the island of Thasos. The flame of war reached these lands, and the Spartan commander, Brasidas, besieged the city of Amphipolis, which was under the protection of the Athenians. When the Athenian commander saw that he could not hold out without assistance, he demanded aid of Thucydides, who, unfortunately, did not arrive till the night after the city was surrendered. The Athenians punished him by banishment. Thus the active mind of Thucydides obtained the leisure necessary for his historical masterpiece, which he wrote at Scaptesyla, in Thrace, the birthplace of his wife. While in exile, he dared to enter into connexion with the Spartans; not, however, to the injury of his country, but for the advantage of his historical work; for he maintained in their army certain persons, who gave him full and authentic information of all the events of the Peloponnesian war. Thus he was placed in a situation to compare reports, and, by a careful examination, to determine the truth. He was afterwards recalled to Athens, but returned again to Thrace, and died there, in his seventieth or eightieth year. According to Pausanias, he was assassinated in Athens. This, at least, seems to be certain, that a cenotaph was erected to him in Athens. The work which has made his name immortal bears the title Account of the War of the Peloponnesians and Athenians. It consists of eight books, of which only seven are finished: the eighth is to be considered only as a rough draught, which wants the last touches. These eight books, however, embrace only twenty-one years of this memorable war: the last six are wanting. This work is the production of a deep-searching, clear-sighted man, fully acquainted with the nature of history. As a work of art, it stands far higher than the agreeable narratives of Herodotus. While Herodotus gives more interesting accounts, he neither penetrates into the character of the persons of the action, nor seeks out the causes of events springing from the relations of the various states. Thucydides considers history in a higher point of view, treats the particular events as the result of necessity or choice, and by this means makes history a teacher, not merely of what has been, but of what will be. As politics attracted him particularly, his history has a limited character, but, as the political history of a state, is a model, and, as he himself calls it, a treasure for posterity. He first introduced dialogues into historical narratives, with a view of exhibiting the principles and motives of the leading agents. He made historical writing an art, for he not only skilfully united the different threads of the action, but investigated truth with a very critical spirit. Superior to selfishness and national prejudice, he dispenses praise and blame, reproves vices and praises virtue, with impartiality; and, as he spent a great part of his fortune in the collection of materials for his history, his accounts have great value on the score of credibility. As to his style, it justly deserves the praise which has been bestowed on it by all intelligent judges. It has the greatest dignity; every word has a meaning; and it possesses all the qualities upon which the perfection of writing depends. His pictures attract as well by the variety of the coloring as by the power and individuality of the figures. However, at times he is obscure. But the present text of Thucydides is full of the faults occasioned by ignorant transcribers. Among the editions, that of Duker (Amsterdam, 1731, folio) is the most complete. Next to this is the Bipont (1788, 1789, in 6 vols.), valuable on account of the Latin version. Thucydides has been translated into English by Smith.

Thuilleries. (See *Tuileries.*)

Thuiscon. (See *Tuiscon.*)

Thule. This name the ancients gave to the most northern country with which they were acquainted. Probably the word did not always denote the same country or island: many, in fact, may not have attached to it the idea of any precise country. Hence the many contradictory opinions of scholars respecting it. According to Pythias, it is an island, six days' journey to the north of Britannia. Some have imagined it to be one of the Scotch islands, but most the coast of Norway. Mannert and others believe it was Iceland.

Thümmel, Maurice Augustus von, a distinguished German author, was born, in 1738, near Leipsic, where he studied. He subsequently entered the service of the duke of Saxe-Cobourg, whose privy counsellor and minister he became in 1768. From 1775 to 1777, he travelled in France and Italy. He died in 1817, near Cobourg. His chief work is called Travels in the Southern Provinces of France. It is a novel, interspersed with reminiscences of his travels. Ten volumes of it appeared from 1791 to 1805, which contain an abundance of observations and descriptions, sometimes characterized by deep and grave reflection, sometimes by the most unbridled humor. French ease and German feeling are beautifully united in this work. He also wrote some poems. A collection of his works appeared in 1821.

Thunberg, Charles Peter, professor of botany in the university of Upsal, member of more than sixty societies, was born, Nov. 11, 1743, at Jönköping, the capital of Smaland, and studied at Upsal. Linnæus, his great countryman, was his instructer in natural history, and said of him, "Never has any botanist afforded me more satisfaction and pleasure." In 1772, he went as a physician in the service of the Dutch East India company to the cape of Good Hope, where, during three years, he made journeys into the interior. In 1775, he went to Batavia, and afterwards to Japan, as physician to the embassy of the East India company to the emperor of Japan. Thunberg and Kämpfer are the only persons who have given us much authentic information respecting that country. In 1777, he visited Ceylon, and, in 1778, went again to the cape of Good Hope, in order to return to his own country. He subsequently presented his rich collections to the university of Upsal, having been appointed professor of botany in Upsal immediately on his return. In 1784, after the death of the younger Linnæus, he was made *professor ordinarius*. The royal academy chose him their president. At his request, Gustavus III gave the ancient royal garden, as a botanical garden, to the university. The rich *museum Thunbergianum* is preserved there—the most costly collection of natural history ever presented to a European university. The most important works of this indefatigable inquirer are, 1. his Travels, in four vols. (it has been translated into English, German, Dutch, French, &c.); 2. *Flora Japonica*; 3. *Flora Capensis*; 4. *Icones Plantarum Japonicarum*; 5. Description of Swedish Mammalia; 6. *Museum naturalium Academiæ Upsaliensis*; 7. *Dissertationes Academicæ*; and a numerous collection of treatises, mostly in the Transactions of the academies of sciences at Stockholm and Petersburg, and those of the scientific society at Upsal. Peculiarly valuable are his *Kæmpferus illustratus*, and the notes respecting Japanese coins and language. He died, Aug. 8, 1828, near Upsal.

Thunder and Lightning.* It has

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* This article is from doctor Thomson's Outlines of the Science of Heat and Electricity.

been demonstrated, by the sagacity of doctor Franklin, that thunder and lightning is merely a case of electrical discharges from one portion of the atmosphere to another, or from one cloud to another. Air, and all gases, are non-conductors; but vapor and clouds, which are composed of it, are conductors. Clouds consist of small hollow bladders of vapor, charged each with the same kind of electricity. It is this electric charge which prevents the vesicles from uniting together, and falling down in the form of rain. Even the vesicular form which the vapor assumes is probably owing to the particles being charged with electricity. The mutual repulsion of the electric particles may be considered as sufficient (since they are prevented from leaving the vesicle by the action of the surrounding air, and of the surrounding vesicles) to give the vapor the vesicular form. In what way these clouds come to be charged with electricity, it is not easy to say. But, as electricity is evolved during the act of evaporation,[*] the probability is, that clouds are always charged with electricity, and that they owe their existence, or at least their form, to that fluid. It is very probable that when two currents of dry air are moving different ways, the friction of the two surfaces may evolve electricity. Should these currents be of different temperatures, a portion of the vapor which they always contain will be deposited; the electricity evolved will be taken up by that vapor, and will cause it to assume the vesicular state constituting a cloud. Thus we can see, in general, how clouds come to be formed, and how they contain electricity. This electricity may be either vitreous or resinous, according to circumstances. And it is conceivable, that by long-continued opposite currents of air, the charge accumulated in a cloud may be considerable. Now, when two clouds, charged, the one with vitreous and the other with resinous electricity, happen to approach within a certain distance, the thickness of the coating of electricity increases on the two sides of the clouds which are nearest each other. This accumulation of thickness soon becomes so great as to overcome the pressure of the atmosphere, and a discharge takes place, which occasions the flash of lightning. The noise accompanying the discharge constitutes the thunder-clap, the long continuance of which partly depends on the reverberations from neighboring objects. It is, therefore, loudest and largest, and most tremendous, in hilly countries. These electrical discharges obviously dissipate the electricity; the cloud condenses into water, and occasions the sudden and heavy rain which always terminates a thunder-storm. The previous motions of the clouds, which act like electrometers, indicate the electrical state of different parts of the atmosphere. Thunder, then, only takes place when the different strata of air are in different electrical states. The clouds interposed between these strata are also electrical, and owe their vesicular nature to that electricity. They are also conductors. Hence they interpose themselves between strata in different states, and arrange themselves in such a manner as to occasion the mutual discharge of the strata in opposite states. The equilibrium is restored; the clouds, deprived of their electricity, collapse into rain; and the thunder terminates. In thunder-storms, the discharges usually take place between two strata of air, very seldom between the air and the earth. But that they are sometimes also between clouds and the earth cannot be doubted. These discharges sometimes take place without any noise. In that case, the flashes are very bright; but they are single flashes, passing visibly from one cloud to another, and confined usually to a single quarter of the heavens. When they are accompanied by the noise which we call *thunder*, a number of simultaneous flashes of different colors, and constituting an interrupted zigzag line, may generally be observed stretching to an extent of several miles. These seem to be occasioned by a number of successive, or almost simultaneous discharges from one cloud to another, these intermediate clouds serving as intermediate conductors, or stepping-stones, for the electrical fluid. It is these simultaneous discharges which occasion the rattling noise which we call *thunder*. Though they are all made at the same time, yet, as their distances are different, they only reach our ear in succession, and thus occasion the lengthened rumbling noise, so different from the snap which accompanies the discharge of a Leyden jar. If the electricity were confined to the clouds, a single discharge, or a single flash of lightning, would restore the equilibrium. The cloud would collapse, and discharge itself in rain, and the serenity of the heavens would be restored; but this is seldom the case. I have witnessed the most vivid discharges of lightning from one cloud to another, which enlightened the whole horizon, continue for several hours, and amounting to a very considerable number, not fewer certainly than fifty, and terminating at last in a violent thunder-storm. We see that these discharges, though the quantity of electricity must have been immense, did not restore the equilibrium. It is obvious from this, that not only the clouds, but the strata of air themselves, must have been strongly charged with electricity. The clouds, being conductors, served the purpose of discharging the electricity with which they were loaded, when they came within the striking distance. But the electric stratum of air, with which the cloud was in contact, being a non-conductor, would not lose its electricity by the discharge of the cloud. It would immediately supply the cloud, with which it was in contact, with a new charge. And this repeated charging and discharging process would continue to go on till the different strata of excited air were brought to their natural state. From the atmospherical electric journal, kept by Mr. Reed, at Knightsbridge, during two whole years, from May 9, 1789, to May 9, 1791, it appears that clouds, and rain, and hail, and snow, are always charged with electricity; sometimes with negative, but more frequently with positive electricity. When the sky is serene and cloudless, the strata of air are generally charged with positive electricity. In such cases, the thunder rod is charged by induction; the highest end acquiring the opposite state of electricity from the air, and the lowest end the same kind of electricity, while a portion of the rod towards the middle is neutral. During the first year, there occurred only seven days in which no electricity could be perceived; and during the second year, when the apparatus was much more complete, not a single day occurred which did not give indications of electricity in the atmosphere. During the first year, the electricity was vitreous or positive 241 times, and, during the second year, 423 times. This difference was chiefly owing to the apparatus. During the first year, there occurred seventy-three days in which the signs of electricity were so weak that the kind could not be determined. In the second year, it was found that on days when the electricity is weak, it is always vitreous or positive. During the first year, the electricity was observed resinous or negative 156 times, and, during the second year, 157 times. During the first year, sparks could be drawn from the apparatus during ninety-eight days, and, in the second year, during one hundred and six days. From these facts, the probability is, that the electrical state of the atmosphere did not differ much during each of the two years, during which the observations were kept. It would tend greatly to promote the progress of meteorology, which is obviously very much connected with electricity, if a register were kept in the torrid zone of the state of the electricity of the atmosphere during a whole year. The weather in these countries is so regular, and the transition from dry weather to rain so marked, that we have reason to expect corresponding changes in the state of the electricity of the atmosphere. The heaviness of the rain, and the large size of the drops in these countries, indicate that the clouds from which the rain comes are situated at a great height above the surface of the earth. If the accumulation of electricity should be at a corresponding height, this would render a greater height necessary for the rod, by means of which the electrical indications are determined.

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[*] M. Pouillet has lately published a set of experiments which seem to overturn Volta's theory of the evolution of electricity by evaporation. He has shown that no electricity is evolved by evaporation, unless some chemical combination takes place at the same time. But it follows from his experiments, that electricity is evolved abundantly during combustion; the burning body giving out resinous, and the oxygen vitreous electricity. In like manner, the cabronic acid emitted by vegetables is charged with resinous electricity, and the oxygen probably charged with vitreous electricity. These two sources are sufficiently abundant to account for the vast quantity of electricity so often accumulated in the clouds.

Thunderbolt; a shaft of lightning; a brilliant stream of the electric fluid passing from one part of the heavens, and particularly from the clouds to the earth. (See the preceding article.)

Thundering Legion. (See *Legio Fulminatrix.*)

Thurgau, or **Thurgovia**; a canton of Switzerland, bounded north and north-east by lake Constance, south-east and south by St. Gall, and south-west by Zurich and Schaffhausen. The chief town is Frauenfeld. It is divided into eight districts, and has a democratic constitution. The rivers are the Thur and Sitter. It is partly level, and partly hilly; but the elevations do not exceed 2500 feet above lake Constance. It is fertile and well cultivated, producing wheat, barley, oats, rye, flax, hemp, and vines, and has also good pasture. Cotton and silk are manufactured, but the staple article is linen. (See *Switzerland.*)

Thuringia (in German, *Thüringen*), the former name of an extensive tract, in the central part of Germany, in Saxony, having Franconia on the west, and Meissea on the east. In the latter part of the fifth century, it was inhabited by the Thuringians, who are then first mentioned in history, and whom some consider as a Visigothic tribe, while others maintain that they are the same as the Hermunduri. The kingdom of Thuringia was conquered by the Frankish kings, in 530, who governed it by dukes. In the thirteenth century, it was annexed to Meissen, or Misnia. It was styled a landgraviate, and gave the title of landgrave to the elector of Saxony; but it was subdivided among many petty princes. The circle of Thuringia comprised the northern part. The name of *Thuringia* became gradually disused after the incorporation of the territory with other states. It is still, however, preserved, in a limited sense, in the *Thuringian forest.* The greatest part of the old Thuringia now belongs to Prussia.—See Hersog's *Geschichte des Thüringischen Volkes* (Hamburg, 1827), or Galletti's *Geschichte Thüringens* (1781—1785, 6 vols.).

Thuringia, Forest of; a hilly and woody tract, in the interior of Germany, comprising a part of the ancient Hercynian forest, and included within the territories of Prussia, Gotha, Weimar, Meiningen, Hildburghausen, and Coburg. It is about seventy miles long, and from eight to sixteen broad; population, about 188,000; square miles, about 1200. It is covered with wood; thinly peopled, containing only small villages; but rich in mines, particularly of iron. The highest summit, Schneekopf (q. v.), is about 3000 feet high. Inselsberg, another summit, is nearly as high.

Thurlow, Edward, baron Thurlow, lord high chancellor of Great Britain, was the son of the rector of Ashfield, in Suffolk, where he was born in 1732. He was educated at Caius college, Cambridge; and after having been a student of the Middle Temple, he was, in 1758, called to the bar. He rose to eminence through the display of his abilities in the famous Douglas cause; and he soon after obtained a silk gown. In 1770, he was appointed solicitor-general, in the room of Dunning (lord Ashburton), and the following year he succeeded lord Walsingham as attorney-general. He was now chosen member of parliament for the borough of Tamworth, and became a warm and powerful supporter of the ministry in the house of commons. He retired from office in 1783, but resumed it again on the dissolution of the coalition ministry, and continued to hold the seals under the premiership of Mr. Pitt till 1792. His death took place in September, 1806. He was succeeded in the peerage by his nephew. He was never married, but left three illegitimate daughters.

Thurn and Taxis (*De la Tour*, or *Della Torre*); a family of princes and counts in Germany, which originated in Milan. The first of this family, it is said, received the name *Della Torre* from St. Ambrose. bishop of Milan (from 374 to 397), on account of his defence of the new gate against the Arian rebels. In 1313, Lamurald de la Tour took the surname of *Tassis*, now *Taxis*. His great grandson Roger I, count of Thurn and Taxis and Valsassina, went to Germany, where he established the first posts (q. v.) in Tyrol. The post establishment in the German empire became, at a subsequent period, a fief of the family, which, in Germany, as well as in several other countries, enjoyed great privileges, so that they became rich and powerful. Many important privileges have been continued to this family since the new organization of the German confederacy. The present head of the family has an income of about 800,000 guilders a year, and possesses about 260 square miles, in various German countries, with 30,746 inhabitants. Besides the princely line, there are four lines of counts.

Thursday (in Latin, *dies Jovis*, whence the French *Jeudi*); the fifth day of the week, so called from the old Teutonic god of thunder, Thor, the northern Jupiter. (See *Thor.*) The German name for Thursday is *Donnerstag* (Thunderday), thunder being the chief attribute of Thor. (See *Maunday-Thursday.*) Ascension day (q. v.) is also called *Holy Thursday.*

Thusnelda; wife of Arminius. (q. v.)

Thyades; the same as *Mænades.* (q. v.)

Thyestes; son of Pelops and Hippodamia. Having seduced the wife of his brother Atreus (q. v.), the latter, in revenge, served up to him the body of his own son at a feast. Thyestes, discovering the fact, fled to Sicyon with his daughter Pelopia, by whom he had a son, Ægisthus. An oracle had declared that the son and grandson of Thyestes should revenge the crime of Atreus; and when Ægisthus was grown up, he accordingly murdered his uncle, at the instigation of his father. Thyestes then ascended the vacant throne, but was afterwards expelled by Agamemnon and Menelaus, the sons of Atreus, and died in banishment on the island of Cythera. The tragedies of Sophocles and Euripides, on this subject, are lost; that of Seneca is yet extant.

Thyme (*thymus vulgaris*); a small labiate plant, a native of the south of Europe, and frequently cultivated in gardens. The stems are branching, eight inches or a foot in height; the leaves simple and opposite; and the flowers disposed in whorls near the summits of the branches. All parts of the plant have a strong and penetrating odor, as is usual in this family. Its essential oil is extremely acrid and pungent, and is used for culinary purposes, but less so now than before the Oriental spices were common. Bees are very fond of this, as well as of other labiate plants, and the honey obtained is of superior quality. The thyme of mount Hymettus is celebrated. We have no native species of thyme in America, but *T serpyllum* is naturalized in many parts of the U. States. This plant has the same sensible qualities as the garden thyme, but the flavor is milder and rather more grateful, and the essential oil less abundant and not so powerful.

Thyrsus (Greek θυρσος); one of the most ancient and common attributes of Bacchus and his followers. It consisted of a lance, the iron part of which was hidden in a cone of pine, in memory of the stratagem which the followers of Bacchus employed against the Indians, when they went to combat them with pikes, the iron of which was concealed by ivy leaves. It was used at all the festivals held in honor of the god of wine, and often enveloped with wreaths of ivy or bay, or with little fillets of other kinds. (See *Bacchus*.)

Tiara; originally, and with Herodotus, the cap of the Persian kings. The tiara of the pope is a high cap, surrounded by three crowns rising one above the other. These crowns are covered with precious stones, and ornamented with an orb, on which stands a cross, and on two sides of it a chain of precious stones. Originally, the popes wore a common bishop's mitre. (See *Infula*.) It has been said, but not proved, that Clovis, the Frankish king, in the fifth century, or Constantine the Great, in the beginning of the third century, presented the pope with a gold crown, which the latter united with the *infula*. According to Henke (Ecclesiastical History, in German, vol. ii.), the popes first wore the simple crown in the ninth century; Cicognara (*Storia della Scultura*, &c.), however, is of opinion, that only Alexander III, in the twelfth century, surrounded the mitre with a crown, as a sign of sovereignty. Boniface VIII (who died in 1303) is said to have added the second, as a sign of power over spiritual and temporal things, and Urban V (who died in 1370) the third, in order, as is believed, to indicate the power of the pope in the church, suffering, militant and triumphant (or in heaven, on earth and in hell.) Perhaps the three crowns were to indicate the three parts of the globe at that time known. At the consecration or coronation of the pope, the following words are pronounced: *Accipe tiaram tribus coronis ornatam, et scias te esse patrem, principem ac regem, rectorem orbis in terra, vicarium Salvatoris nostri Jesu Christi.* As the mitre is placed over the coat of arms of bishops, and the cardinal's hat over that of the cardinals, so the tiara, with the two keys, is placed over the family coat of arms of the pope. On coins, &c., the tiara and two keys are often found alone.

Tiber; a river in Italy, which rises in the Apennine mountains, and, in its course of about 160 miles, receives several small rivers, as the Teverone, the Chiana, Puglia, Nera, &c., runs through Rome, and empties, at Ostia, into the Tuscan sea. It owes its fame to the Roman poets. In itself it is insignificant, and always muddy. The fishes in it are not healthy, and are bad tasted. It is navigable only for small craft. Its water is yellow and thick. It has been long believed that this river contains many antiquities—an opinion founded on its frequent inundations in former times; nay, it has been even said, that Gregory the Great, in his religious zeal, ordered the statues and monuments of heathen antiquity to be thrown into the Tiber. Fea, in his work *Novelle del Tevere* (Rome, 1819), maintains, on the contrary, that little would be gained by exploring the mud of the river; and the most recent undertaking of this kind (see *Excavations*) confirms his opinion. That part of Rome which is situated to the west of the Tiber, or on its left bank, is called *Trastevere*, and contains the Vatican, with several other important buildings. The inhabitants of this quarter are distinguished by many peculiarities from the other Romans, and are called *Trasteverini*. (See *Rome*.)—An insignificant creek in Washington has been dignified with the name of *Tiber*.

Tiberias. (See *Genesareth*.)

Tiberius, Claudius Nero, a Roman emperor, born B. C. 42, was the son of a father of the same name, of the ancient Claudian family, and of Livia Drusilla, the wife of Augustus. Rapidly raised to authority by the influence of his mother, he displayed much ability in an expedition against some revolted Alpine tribes, in consequence of which, he was raised to the consulate in his twenty-eighth year. On the death of Agrippa, the gravity and austerity of Tiberius having gained the emperor's confidence, he chose him to supply the place of that minister, obliging him, at the same time, to divorce Vipsania, and wed his daughter Julia (q. v.), whose flagitious conduct at length so disgusted him, that he retired, in a private capacity, to the isle of Rhodes. After experiencing much discountenance from Augustus, the deaths of the two Cæsars, Caius and Lucius, induced the emperor to take him again into favor and adopt him. (See *Augustus*.) During the remainder of the life of Augustus, he behaved with great prudence and ability, concluding a war with the Germans in such a manner as to merit a triumph. After the defeat of Varus and his legions, he was also sent to check the progress of the victorious Germans, and acted in that war with equal spirit and prudence. On the death of Augustus, he succeeded (A. D. 14), without opposition, to the sovereignty of the empire, which, however, with his characteristic dissimulation, he affected to decline, until repeatedly solicited by the servile senate. The new reign was disquieted by dangerous mutinies in the armies posted in Pannonia and on the Rhine, which were, however, suppressed by the exertions of the two princes, Germanicus and Drusus. The conduct of Tiberius, as a ruler, has formed a complete riddle for the student of history, uniting with an extreme jealousy of his own power the highest degree of affected respect for the privileges of the senate, and for the leading virtues of the ancient republican character. He also displayed great zeal for the due administration of justice, and was careful that, even in the provinces, the people should not be oppressed with imposts—a virtue which, according to Tacitus, he retained when he renounced every other. Tacitus records the events of this reign, including the suspicious death of Germanicus (q. v.), the detestable administration of Sejanus (q. v.), the poisoning of Drusus (q. v.), with all the extraordinary mixture of tyranny with occasional wisdom and good sense, which distinguished the conduct of Tiberius, until his infamous and dissolute retirement (A. D. 26) to the isle of Capreæ, in the bay of Naples, never to return to Rome. On the death of Livia, in the year 29, the only restraint upon his actions, and those of the detestable Sejanus, was removed, and the destruction of the widow and family of Germanicus followed. (See *Agrippina*.) At length, the infamous favorite extending his views to the empire itself, Tiberius, informed of his machinations, prepared to encounter him with his favorite weapon, dissimulation. Although fully resolved upon his destruction, he accumulated honors upon him, declared him his partner in the consulate, and, after long playing with his credulity, and that of the senate, who thought him in greater favor than ever, he artfully prepared for his arrest. Sejanus fell deservedly and unpitied; but many innocent persons shared in his destruction, in consequence of the suspicion and cruelty of Tiberius, which now exceeded all limits. The remainder of the reign of this tyrant is little more than a disgusting narrative of servility on the one hand, and of despotic ferocity on the other. That he himself endured as much misery as he inflicted, is evident from the following commencement of one of his letters to the senate: "What I shall write to you, conscript fathers, or what I shall not write, or why I should write at all, may the gods and goddesses plague me more than I feel daily that they are doing, if I can tell." What mental torture, observes Tacitus, in reference to this passage, which could extort such a confession! In the midst, however, of all this tyranny, he often exhibited gleams of strong sense, and of a judicious attention to the public welfare—a remark which holds good in every part of his anomalous reign. Having at length reached an advanced age, Caius Caligula, the son of Germanicus, his grandson by adoption, and Gemellus, the son of Drusus, his grandson by nature, became objects of interest. Caius, however, who had reached the age of twenty-five, and who held the popular favor as a paternal inheritance, was at length declared his successor. Acting the hypocrite to the last, he disguised his increasing debility as much as he was able, even affecting to join in the sports and exercises of the soldiers of his guard. At length, leaving his favorite island, the scene of the most disgusting debaucheries, he stopped at a country house near the promontory of Misenum, where, on the sixteenth of March, 37, he sunk into a lethargy, in which he appeared dead; and Caligula (q. v.) was preparing, with a numerous escort, to take possession of the empire, when his sudden revival threw them into consternation. At this critical instant, Macro, the pretorian prefect, caused him to be suffocated with pillows. Thus expired the emperor Tiberius, in the seventy-eighth year of his age and twenty-third of his reign, universally execrated.

Tibet. (See *Thibet.*)

Tibia: the ancient flute, the invention of which is ascribed to Minerva. It was used among the Greeks and Romans on occasion of almost all festivals, and even as a means of curing certain diseases; by the Romans in their triumphs; by the Lacedæmonians, particularly in war; in celebrating the praises of the gods; at sacrifices and other religious celebrations; at the mysteries of Cybele; at weddings and entertainments; to amuse guests after dinner; also, and particularly, on occasions of melancholy solemnity, as funerals.

Tibullus, Albius; a Roman poet of the golden age of Roman literature. Of his life nothing is known but that he belonged to the equestrian order. The year 711 after the building of Rome is generally taken as the year of his birth. Voss places it about 695 A. U. C. He died, without having held any public office, in 735 or 736 A. U. C., in the flower of his age. We possess, of his writings, a collection of elegies, in four books, of which, however, the fourth contains several pieces of doubtful origin. These poems are among the most perfect of their kind which have come down to us from classical antiquity. Their moral tone, however, is that of a reckless voluptuary. The elegies of Tibullus are superior to those of Propertius (with which, and the poems of Catullus, they are usually printed) in agreeable simplicity and tender feeling, and are free from the insipid prate into which Ovid frequently falls; so that the author deserves the first place among the Roman elegiac poets. The best editions are those of Brouckhusius (Amsterdam, 2 vols., 4to.), Heyne (latest edition by Wunderlich, Leipsic, 1816), and Huschke (Leipsic, 1819). J. H. Voss, in his German translation (Heidelberg, 1810), ascribes the third book to a certain Lygdamus, which opinion is confirmed by Eichstädt. Dart and Grainger are among the English translators of this poet. The latter is much the most successful.

Tic Douloureux (French *tic*, spasm; *douloureux*, painful), a painful affection of a facial nerve, is so called from its sudden and excruciating stroke. It is a species of neuralgia, which comprises similar affections in other parts of the body. It is characterized by acute pain, attended with convulsive twitchings of the muscles, and continuing from a few minutes to several hours. The causes of this affection are unknown, and it often baffles the skill of the physician.

Ticino. (See *Tessin.*)

Tick, in natural history; a little animal of a livid color, with a blunt and roundish tail, elevated antennæ, a globose-ovate form, and full of blood, which infests cows, swine, goats, sheep and dogs.

Tickell, Thomas, an ingenious writer in prose and verse, and the intimate friend of Addison, was born in 1686, and received his education at Oxford, where he obtained a fellowship in his twenty-fifth year. While at the university, an elegant copy of verses, addressed by him to Addison, on his opera of Rosamond, introduced him to the acquaintance of that accomplished scholar, who induced him to lay aside his previous intention of taking orders, appointed him his under secretary of state, and, on his death, bequeathed to him the publication of his works. In 1724, Mr. Tickell obtained the situation of secretary to the lords justices of Ireland. As an author, he takes a prominent rank among the minor English poets; his versification especially, in its ease and harmony, being inferior perhaps to that of no one, except Dryden and Pope. When the latter gave to the world his translation of the Iliad, Tickell printed his own version of the first book, in opposition to that of Pope. The production of this poem occasioned an interruption of the good understanding between Pope and Addison, the former suspecting Addison himself to be the author of the work. Tickell's other writings consist of the Prospect of Peace, a poem (1713); the Royal Progress; Kensington Gardens; a Letter to Avignon; Imitation of the Prophecy of Nereus; with several epistles, odes, and other miscellaneous pieces, to be found in the second volume of the Minor Poets. His death took place at Bath, in 1740.

Ticonderoga; a post-town of Essex county, New York, on the west side of the south end of lake Champlain, and at the north end of lake George; twelve miles south of Crown Point, ninety-five north of Albany; population in 1820, 1493. There is a valuable iron mine in this township.—*Ticonderoga fort*, famous in the history of the American wars, is situated on an eminence, on the west side of lake Champlain, just north of the entrance of the outlet from lake George into lake Champlain, fifteen miles south of Crown Point, twenty-four north of Whitehall; lon. 73° 27′ W.; lat. 43° 30′ N. It is now in ruins. Considerable remains of the fortifications are still to be seen. The stone walls of the fort, which are now standing, are, in some places, thirty feet high. Mount Defiance lies about a mile south of the fort, and mount Independence is about half a mile distant, on the opposite side of the lake, in Orwell, Vermont.

Tides. The ebb and flow of the sea are evidently connected with the moon's motions. The level of the ocean is slightly disturbed by the attraction which is alternately exerted and withdrawn. The waters, for a large space under the moon, being more attracted than the great body of the earth, are thus rendered lighter than those parts of the ocean which are at the same distance as the earth's centre; and, being lighter, they are forced upwards a little by the surrounding mass, which is heavier; just as water and oil will stand at different heights in the two branches of a siphon tube; or just as ice, which is lighter than water, is made to rise a little higher, on that account, when placed in water. If the earth rested immovably upon a fixed support, there would be a tide, or rising of the waters, only on the side towards the moon. But the great body of the earth is just as free to move as a single particle of the ocean, and, if suffered to yield to the moon's attraction, would be carried just as fast. Hence, for the same reason that a particle of water, on the side of the earth towards the moon, is drawn away from the centre, or has its downward tendency diminished, so the solid earth itself is drawn away from the mass of waters, on the side of the earth farthest from the moon. It is the difference of attraction, in both cases, between the surface and the centre, which causes the lightness of the waters, and the consequent elevation. It will be seen, therefore, that, taking the whole earth into view, there are always two high tides diametrically opposite to each other, and two low tides also, midway between the high ones. The high tides are two great waves, or swells, of small height, but extending each way through half a right angle. These waves follow the moon in its monthly motion round the earth, while the earth, turning on its axis, causes any given place to pass through each of these swells and the intervening depressions in a lunar day, or twenty-four hours fifty minutes. What we have said with respect to the moon's influence in disturbing the level of the ocean, may be applied also to that of the sun; only, in the case of the sun, although its absolute action is about double that of the moon, yet, on account of its very great distance, its relative action upon the surface of the earth, compared with that at the centre, is but about one third as great as that of the moon. At new and full moon, when the sun's and moon's actions conspire, the tides are highest, and are called *spring tides*. But at the first and last quarters of the moon, the action on one body tends to counteract that of the other; and the tides, both at ebb and flow, are smallest, and are called *neap tides*. We have supposed the highest tides to happen at new and full moon, and the lowest at the quarters. But the waters do not yield instantly to the action exerted upon them: the greatest effect takes place some time after the attractive influence has passed its point of greatest power. Thus the spring and neap tides actually occur about a day and a half after the times above indicated. So, also, for a similar reason, the real time of high water, in the daily tides, happens about three hours after the moon has passed the meridian. It will be perceived, from what has been said, that the sun's and moon's influence will vary with a change of distance, being greatest when the attracting body is nearest, and *vice versâ*. The phenomena of the tides are modified, moreover, by the situation of the sun and moon with respect to the equator, and the particular latitude of the observer. When, for instance, the moon passes near the zenith of the observer, supposed to be in one of the temperate zones, the opposite high tide will be in the same latitude on the other side of the equator; consequently, under the above circumstances, the high tide, when the moon is above the horizon, exceeds the high tide when the moon is below the horizon; and at a point in the direction of the nearest pole, fifty degrees from the place where the moon is vertical, there will be only one tide in twenty-four hours. The different heights to which the same tide rises, in places but little distant from each other, depend upon local circumstances; as the particular form of the coast, the meeting of currents, &c. Where a bay grows narrower and narrower, like a tunnel, as it runs up from the ocean into the land, the swell of water must rise higher as the passage becomes more contracted in breadth. Thus, in the bay of Fundy, which answers to this description, and is of great extent, the tide sometimes rises to the height of seventy feet. It is frequently asked, why there are not tides in the inland seas and larger lakes. If we observe, upon an artificial globe, the very small space occupied by the largest bodies of water of this description, we shall readily perceive that there can be no appreciable difference in the action of the moon upon so small a portion of the earth's surface; the whole of the lake, or sea, therefore, becomes lighter when the moon is over it, and there is no heavier mass of water ninety degrees distant to force it above its natural level.

Tiebeam. (See *Architecture*, vol. i, p. 337.)

Tieck, Louis, was born in 1773. His critical writings on poetry and the arts may be ranked, with those of the Schlegels, among the most important works of this description, for which the literature of modern Germany has been so much distinguished above that of other nations, and the consequences of which have been perceptible in all branches of æsthetics. His literary course, however, will not be considered by all as free from errors. In breaking from the barriers of the formal French taste, which had taken root in Germany, he has not unfrequently run into the opposite extreme of indistinctness. At the age of nineteen years, he studied at the universities in Halle and Göttingen, and, with his friend Wackenroder, at Erlangen. His William Lovell appeared in 1796, and has some of the crudeness of a youthful production. His Peter Leberecht's Popular Tales (Berlin, 1797, 3 vols.) shows a more mature mind. Not long after, he displayed his peculiar talent for keen satire in sportive poetry, of which his Bluebeard, and Puss in Boots, are striking instances. The Effusions of a Friar attached to the Arts (Berlin, 1797), a work of Wackenroder, in which Tieck took part, is of a singular character. There is a kind of mystery in it, which appears also in the Phantasies on Art (Hamburg, 1799), also by Wackenroder, with additions by him. In 1798, he published his Francis Sternbald's Wanderings, in which, as in the two preceding, a warm love of the fine arts is manifested, very much opposed to the heartless criticism then in vogue. From 1799 to 1801, appeared his translation of Don Quixote (in 4 vols.)—a work, in some respects, of peculiar merit. The Germans have several other translations of the same. In 1799 and 1800, appeared his Romantic Poems. The second number of his Poetical Journal, published in Jena, begins with letters on Shakspeare, which too soon ceased. He had early applied himself to the study of the great British poet, as appears from his publication of the Tempest, with an Essay on Shakspeare's Treatment of the Supernatural (Berlin, 1796). In 1801 and 1802, he lived in Dresden with his friend Frederic Schlegel, and published, with him and several other poets, the *Musenalmanach auf das Jahr* 1802. In 1803, he published *Minnelieder* (Love Songs) of the Suabian Period in a modern German Dress (Berlin, with a preface). In 1804, appeared the Emperor Octavianus, an imitation of an old tale. In 1805, he published, in connexion with Schlegel, the works of their friend Novalis (q. v.), in 2 vols., at Berlin. After this, he went to Italy, and occupied himself much in Rome with ancient German manuscripts in the library of the Vatican. Towards the end of 1806, he returned to Germany, and, while at Munich, suffered the first attack of a painful rheumatism, which, for a long period, prevented him from giving the public any thing new. In 1814 and 1816, appeared his Old English Theatre (in 2 vols.). He has also published two volumes of an Old German Theatre. In London, where he was received, in 1818, with much attention, he materially increased his collections of materials for his larger work on Shakspeare, to which his Shakspeare's *Vorschule* (Leipsic, 1827) may be considered as an introduction. Since 1819, he has lived with his family in Dresden, where he published, in 1821, a collection of his poems (in 3 vols.), and Henry von Kleist's posthumous works. His tales have been published in various souvenirs, &c. Some of them chastise the errors and vices of the time in a tone of decorous humor. In 1824, appeared the beginning of his *Märchen und Zaubergeschichten* (Breslau), in his Pietro of Apone. In Berlin appeared, in 1826, the first half of his Insurrection in the Cevennes. Tieck has written much in periodicals, and several of his articles have been collected in his *Dramaturgische Blätter* (Breslau, 1826, 2 vols.). The completion of Schlegel's Translation of Shakspeare is expected from him. He will probably present the public, at no distant period, with a complete collection of his works.

Tieck, Christian Frederic, professor of sculpture, and member of the academy of fine arts in Berlin, brother of Louis Tieck (q. v.), was born in 1776, at Berlin.

At the expense of the government, he visited Dresden, Vienna, and, in 1798, Paris. In 1801, he returned to Berlin, and soon went to Weimar, where he found much employment as a sculptor. He was appointed professor there, and went, in 1805, to Italy, in company with his brother Louis. In Rome, he produced several works, and went, in 1809, to Münich. In 1812, he returned to Italy, where he lived for some time in Carrara with Rauch. (q. v.) They united their efforts in several works. In Carrara, he made for the then crown-prince of Bavaria the busts of Lessing, Erasmus, Hugo Grotius, Herder, Bürger, Wallenstein, Bernard of Weimar, William and Maurice of Orange, marshal Saxe, and many others, for the Valhalla at Münich; also a statue of Necker, and several others, for madame de Staël. He returned to Berlin in 1819. The new theatre at Berlin, and many other places in that city, are ornamented with his productions. In 1820, he became a member of the senate of the academy of fine arts in the Prussian capital, and is one of the most active members of the society for furnishing models for the different mechanic arts, which has already had so great an effect in improving taste in workmanship in the north of Germany.

Tiedge, Christopher Augustus, a distinguished German lyric poet, was born in 1752, at Gardelegen, in the Altmark, Prussia. His most important poem is *Urania*, which first appeared in 1801, but was improved in subsequent editions. It is of a lyrical-didactic character. In 1822, appeared his complete works, in seven small volumes.

Tierney, George, son of a merchant of London, born in 1761, was educated at Cambridge, and designed for the bar, to which he was called. His father had some connexion with the East India company; and the first publication of Mr. Tierney (1787) was the Real Situation of the East India Company. Mr. Tierney now engaged in political life, and was sent down by a noble duke as candidate for Colchester, when he stood a severe contest at a great expense, which his patron refused to pay. The loss therefore fell heavily on Tierney. In 1796, he was nominated by the popular party to oppose Mr. Thelluson, for the borough of Southwark; and, although defeated on the poll, yet, on a petition to the house of commons, he removed his opponent by the treating act; and, on the next return, as his competitor was legally disqualified, Mr. Tierney was declared duly elected. As soon as he was in the house, he entered warmly into the measures of the whigs. He soon proved himself an able speaker, and long ranked as one of the first in the house. During a debate in the year 1798, some words spoken in the house were the occasion of a duel between him and Mr. Pitt, in which, however, neither party was wounded. When Mr. Addington became minister, in 1802, he made Mr. Tierney treasurer of the navy. In 1806, under the Grenville administration, Mr. Tierney was made president of the board of control, but went out of office early in the following year, on the resignation of the ministry. He then lost his seat for Southwark, but afterwards sat for different places; in 1806 for Athlone, in 1809 for Bandon Bridge, in 1813 for Appleby, and in 1818, 1820 and 1826, he represented the proprietor of Knaresborough. In 1827, Mr. Canning invited him to the mastership of the mint, from which he retired, with lord Goderich, in 1828. His death took place Jan. 25, 1830.

Tiers État (*third estate*). There was a time in France when the nobility and clergy possessed the property of almost the whole country. The cities were insignificant, and the former two, therefore, alone appeared at the diets. By degrees the cities rose in wealth and importance, became free from the yoke of the feudal lords, and of course were to be summoned also, when taxes were to be granted. Even the peasantry, having acquired the ownership of the ground which they cultivated, rose in importance; and Louis IX summoned the cities and bailiwicks to send deputies to the diets in 1252. But this was done particularly by Philip IV (the Fair), in 1303, when he was desirous to make himself popular on account of his quarrel with pope Boniface VIII; hence the name *tiers état*. This order, however, was subjected to great humiliations: while the clergy were seated to the right of the king, and the nobility to the left, the deputies of the cities and bailiwicks were obliged to stand outside of the bar, and to receive and answer the propositions of the king on their knees. But the steady march of civilization made the third estate the nation, and the government, embarrassed or unsupported by the clergy and nobility, turned its eyes to this important class in 1788; and Sieyes, in his treatise *Qu'est ce que le Tiers État?* (1789), gave utterance to the feeling of the people. The *tiers état*, at present, is the nation itself; so that the term became un constitutional, even during the restoration.

Tiflis. (See *Teflis.*)

Tiger. This animal and the lion are the largest and most powerful of the cat kind. The tiger is found only in the East Indies, in Hindoostan, Siam, Cochin-China, Malacca, and the isles of Sunda. Its strength and sanguinary disposition are such that it is the terror of the inhabitants in those countries; and no animal, except the elephant, is capable of resisting it. It even comes into the midst of villages, in the night time, for the purpose of carrying off cattle. The color is yellow, with transverse black stripes; and the tail has alternate black and yellow rings. The pupil of the eye is round. It resembles the other animals of the cat tribe in every respect, can be tamed as easily as the lion, and becomes familiar with its keeper. Its voice is very powerful, and resembles that of the lion.

Tiger Flower (*tigridia pavonia*); a Mexican plant, frequently cultivated in gardens, on account of the magnificence of its flowers. It belongs to the same natural family as the iris. The root is a scaly bulb: the leaves are radical, sword-shaped, and tapering towards the point of insertion: the stem is about a foot in height, slightly zigzag, dividing into two or three branches, and bearing a few alternate, distant leaves: the flowers are solitary, terminal, very large, of a singular form, and very evanescent. The three exterior divisions of the corolla are much the largest, of a fine orange-red towards the extremity; whitish or yellowish, and beautifully spotted, at the base. It is tolerably hardy, and is increased by seed or offsets.

Tigranes; a celebrated king of Armenia Major, who reigned in the last century before Christ. He was delivered, by his father, Artaxias, as a hostage to the Parthians, who, upon the death of his father, restored him to the throne, upon condition that he should cede to them a portion of his dominions. With Mithridates, whose daughter Cleopatra he married, he entered into an alliance against the Romans; and, having conquered Cappadocia, his success induced the Syrians, wearied out by the continual family discords of their rulers of the house of the Seleucidæ, to invite him to take possession of their country. He did so, and subdued a great part of Cilicia and Syria, but would not enter into a second alliance with Mithridates against the Romans. He preferred attacking the Parthians; recovered that part of his dominions which had surrendered to them, and conquered Mesopotamia and Mygdonia; then took from the Seleucidæ the portion of Syria yet possessed by them, and a great part of Phœnicia, and assumed the arrogant title of *king of kings*. But the Roman consul Lucullus soon required him to deliver up Mithridates, who had fled to him for protection. Upon his refusal, a war ensued, in which Tigranes was defeated. He now committed to Mithridates the conduct of the war; but they were both conquered in a pitched battle. In the following year, however, the two kings, taking advantage of the dissensions which had broken out among the Romans, subdued Armenia and Cappadocia. But the son of Tigranes rebelled against his father, who was thus compelled to divide his army. He, however, defeated his son, and obliged him to fly into Parthia. The Parthians now took part with the son, and made an incursion into Armenia, at the same time that Mithridates was defeated by the Romans, who were eventually joined by the son of Tigranes. Tigranes, relying upon the magnanimity of Pompey, resolved to surrender to him; whereupon Pompey gave him a portion of Armenia, and likewise of Mesopotamia. But the son of Tigranes having again engaged in a conspiracy against his father, as well as against the Romans, Pompey sent him in chains to Rome; but his father, in consequence of the friendly disposition which he manifested towards the Romans, was allowed to retain the title of their friend and ally, and died as such in the eighty-fifth year of his age.

Tigris; a river of Asia, which rises in the mountains of Armenia, about fifteen miles east of the source of the Euphrates, and, flowing along towards the eastern frontiers of Turkey, on the west side of Curdistan, in a south-south-east direction, joins the Euphrates at Corna, sixty miles north-west of Bassora. The country included between the Tigris and Euphrates, was anciently called *Mesopotamia*; in modern times, *Diarbekir*, and *Al-Gezira*. This river was particularly famed in antiquity; and on its banks were the cities of Nineveh, Ctesiphon and Seleucia. In modern times, it can boast the famous city of Bagdad, and the secondary ones of Diarbekir and Mosul. Its course is generally rapid. Between Corna and Bagdad, it is about two hundred yards wide, and navigable for boats of twenty or thirty tons. Small boats descend from Diarbekir.

Tilghman, William, LL. D., chief

justice of the state of Pennsylvania, was born August 12, 1756, in Talbot county, Maryland, to which province his paternal grandfather had emigrated from England, in 1662. In 1762, his family removed to Philadelphia, and, in the succeeding year, he was placed at the academy, where he remained until 1769, when he entered the college. He was distinguished for his attainments in classical literature, and, after receiving his bachelor's degree, continued for some time to study it under doctor Allison. In February, 1772, he began the study of the law in Philadelphia, and pursued it until 1776, when his father removed again to his estate in Maryland. From that time until the summer of 1779, he lived in great retirement, prosecuting his favorite studies—jurisprudence, history and the belles-lettres. At the close of the revolutionary war, in 1783, he was admitted to the bar, and soon acquired eminence. In the midst of a successful and lucrative practice, he was three times successively elected to serve as a member of the legislature of Maryland, in the years 1788—89—90. In 1789, he was also one of the electors appointed to choose the first president under the federal constitution. In 1791, he was elected a member of the state senate, in which station he remained until 1793, when he removed to Philadelphia. March 3, 1801, he was appointed chief judge of the circuit court of the U. States, for the Pennsylvania circuit. In a year, however, the law which erected this court was repealed, and Mr. Tilghman resumed his duties as an advocate. In July, 1805, he was appointed president of the court of common pleas, in the first district, and, in the beginning of 1806, was made chief justice of the supreme court of the state—an office which he retained until his decease, April 30, 1827. Mr. Tilghman's powers, as an advocate, were highly respectable; but, in the capacity of judge, he was eminent, owing to his singular clearness and firmness of mind, his veneration for the law, his untiring industry, and perspicuous diction, combined with his general attainments and fine moral qualities. Pennsylvania owes him a great debt of gratitude, for the accomplishment of the incorporation of the principles of scientific equity with the law of the state, or rather for the repeated recognition from the bench, that, with few exceptions, they constitute an inseparable portion of the law.

Tillemont, Louis Sebastian le Nain de, an eminent historian, born at Paris, in 1637, was the son of a master of requests, and received his education at the Port Royal. He assumed the name of Tillemont on entering the priesthood, devoted himself to study, and, by his extraordinary industry and accuracy of research, gained a high reputation as a historical writer. His death took place in 1698. He was the author of *Mémoires pour servir à l'Histoire Ecclésiastique des six premiers Siècles* (16 vols., 4to., 1693—1712), and *Histoire des Empereurs et des autres Princes qui ont regné durant les six premiers Siècles de l'Eglise* (6 vols., 4to., 1690—1738).

Tiller. (See *Helm.*)

Tilloch, Alexander, LL. D., the son of a tobacconist of Glasgow, born in 1759, was intended by his father to follow his own business, and taken into his warehouse; but a strong bias towards mechanical and scientific pursuits soon diverted his attention from commercial pursuits. In 1736, a jeweller of Edinburgh, named Ged, had devised the art of printing from plates, and produced an edition of Sallust so printed; but the art was undervalued, and perished with him. Doctor Tilloch revived it, and carried it to the state of practical utility which it now exhibits, having himself again made the discovery without any previous acquaintance with Ged's attempts. In this new process, Mr. Foulis of Glasgow, a printer, joined him; and a patent in their names was taken out, both in England and Scotland. Circumstances, however, induced them to lay aside the business for a time; and it never was renewed by them as a speculation. In 1787, doctor Tilloch removed to London, and purchased the Star, an evening paper, which he continued to edit till within four years of his death. In June, 1797, he projected and established the Philosophical Magazine, sixty-five volumes of which are now before the public; and only fifteen days before his death, he had obtained a patent for an improvement on the steam-engine. The last work which he was engaged to superintend, was the Mechanics' Oracle, published in numbers at the Caxton press. In his religious opinions, doctor Tilloch was a dissenter from the established church, and preached occasionally. He died in 1825.

Tillotson, John, an English prelate, son of a clothier, near Halifax, was born in 1630. His father, a strict Calvinist, brought up his son in the same principles, and sent him a pensioner to Clare hall, Cambridge, of which he was elected a fellow in 1651. It is not known when he entered into orders; but his first sermon which appeared in print is dated 1661, at which time he was still among the Presbyterians. When the act of uniformity passed, in the following year, he submitted to it, and, becoming celebrated for his pulpit oratory, was chosen preacher to the society of Lincoln's inn. In 1666, he took the degree of D. D., and was made king's chaplain, and presented to a prebend of Canterbury. When Charles II, in 1672, issued a declaration for liberty of conscience, for the purpose of favoring the Roman Catholics, he preached strongly against it, but was, nevertheless, advanced to the deanery of Canterbury, and soon after presented to a prebend in St. Paul's. Popery was so much the object of his aversion, that, in a sermon preached before the king, in 1680, he expressed sentiments of intolerance which he himself acknowledged to his friends could not be defended. He warmly promoted the exclusion bill against the duke of York, and refused to sign the address of the London clergy to the king, on his declaration that he would not consent to it. At the execution of lord William Russel, he attended with doctor Burnet; and, though afterwards decided friends to the revolution, both these divines urged that nobleman to acknowledge the unlawfulness of resistance. On the accomplishment of the revolution, he was taken into favor by king William; and, in 1689, he was appointed clerk of the closet to that sovereign, and subsequently permitted to exchange the deanery of Canterbury for that of St. Paul's. On the refusal of archbishop Sancroft to take the oaths to the new government, he was appointed to exercise the archiepiscopal jurisdiction during the suspension of that prelate; and, in 1691, after exhibiting the greatest reluctance, he was induced to accept the archbishopric itself. He had previously formed a scheme for the comprehension of the Presbyterians within the pale of the church, which had been rejected by the convocation. He had also failed in another design for forming a new book of homilies; and a sermon which he preached before the queen, against the absolute eternity of hell torments, still further involved him with the advocates of orthodoxy. When, therefore, he accepted the primacy, a large party assailed him with great animosity; and he was reproached with the inconsistency of his own conduct with the doctrine he had advanced to lord William Russel. He bore these attacks in silence, and even prevented some prosecutions for libel against him, directed by the crown. He was also charged with Socinianism; in answer to which he republished four of his sermons on the Incarnation and Divinity of our Savior. There appears to have been no other ground for that imputation, than that he defended Christianity on rational grounds, and corresponded with such men as Limborch, Locke and Le Clerc; to which reason doctor Jortin adds, that he had broken an ancient and fundamental rule of controversial theology—"Allow not an adversary either to have common sense or common honesty." He now exerted himself to advance the respectability of the church, and, among other things, wished to correct the evils arising from non-residence. He was, however, counteracted in all his endeavors, by the most perverse opposition, which rendered his high station a scene of much more disgust than gratification, and, soon after, died of a paralytic stroke, in 1694. He left his widow nothing but the copyright of his sermons. Doctor Tillotson was open, sincere, benevolent and forgiving; and although, in some points, too compliant, and liable to the charge of inconsistency, his intentions seem to have been pure and disinterested. His sermons maintain a place among the most popular of that class of compositions in the English language, displaying great copiousness of thought and expression, and abounding in passages which strongly impress the mind. His sermons are doubtless much less read than formerly, but can scarcely fail of remaining a permanent part of the branch of English literature to which they belong.

Tilly, John Tzerklas, count of, one of the most celebrated generals of the seventeenth century, was born in 1559, in Walloon Brabant, at the castle of Tilly. He was, in his youth, a Jesuit. After being educated strictly and fanatically, he entered the Spanish, the Austrian, and at last the Bavarian service. Under Alva and other commanders, he formed his military talents, and became accustomed to silent obedience, to a stern pursuit of his objects without regarding the calls of mercy, and to the destruction of heretics. He rose, by degrees, to the command of the army of the league, in the thirty years' war. (q. v.) He distinguished himself much as a general; and when, in 1630, Wallenstein was obliged to give up the command, Tilly was appointed generalissimo of the imperial troops. His most celebrated exploit is the bloody sack of Magdeburg, May 10 1631; and history has few pages so black as those on which the atrocities of Isolani's Croats and Pappenheim's Walloons are recorded. Some officers, at length, implored Tilly to put a stop to the horrible outrages. He coldly replied, "Come back within an hour, and I will then see what is to be done. The soldier ought to have some reward for his labors and dangers." On the 14th, he entered the burned and plundered city in triumph. "Since the destruction of Troy and Jerusalem, no such victory has taken place," he wrote to his master. Gustavus Adolphus met him at Breitenfeld, September 7, and Tilly, who had been thirty-six times victorious, was now entirely beaten, and was himself wounded. In a subsequent engagement with the Swedes, on the Lech, a cannon ball shattered his thigh, and he died in a few days, April 30, 1632. His face was repulsive; his manners always monastic, even amidst the dissoluteness of a camp of that time. He never accepted money, and left but a small fortune. He refused the grant of the principality of Kalemberg. As a soldier, he was prompt, cunning and cruel.

Tilsit; a town of East Prussia, in Gumbinnen, a capital of a circle; fifty miles north-east of Königsberg, fifty south-south-east of Memel; lon. 21° 56′ E.; lat. 55° 5′ N.; population, 8248. It is situated on two rivers, the Niemen (here called the *Memel*) and the small river Tilse, which separates the town from the castle. It is a commercial town, well built, and contains an hospital, two Lutheran churches, and a provincial school. The chief articles of export are corn, wax, salt, salted provisions, hats and leather. The circle of Tilsit is a level and fertile tract, lying on the Curische-Haff.

Peace of Tilsit. The battle of Friedland (q. v.) on June 14, 1807, terminated in the total rout of the Russian forces, and the annihilation of Prussia's last hope. June 18, when the French were already on the Niemen, the emperor Alexander sent proposals for an armistice to the grand duke of Berg, which Napoleon readily accepted. The battles of Eylau and Friedland, continual skirmishes, and the siege of Dantzic, had much weakened the French army; and Napoleon was obliged to keep an attentive eye upon Austria, which, in case of his defeat, would not have failed to attack him. At the same time, the Russian cabinet complained of inactivity on the part of the English, so that the French and Russian monarchs were the more readily disposed to come to terms. They met, June 25, on a raft built for the purpose on the Niemen, in presence of the two armies. Tilsit was declared, by Napoleon, neutral, and the emperors and the king of Prussia had their head-quarters there, from the 28th, in order to expedite the negotiations for peace. The queen of Prussia, at the invitation of Napoleon, also repaired to Tilsit. July 7, peace was concluded between Napoleon and Alexander, by Talleyrand, Kurakin, and Labanoff Rostoffski, Kalckreuth and Golz. The question was only respecting the territory of the king of Prussia, who was obliged to cede one half of his country in order to retain the other, under the hardest conditions, which it was almost impossible to fulfil. By the terms of the peace, it was settled, 1. that the provinces torn from Poland by Prussia, in 1793 and 1795, should form a new duchy of Warsaw; 2. that Dantzic, with a territory two leagues in circuit, should be made a free city, under the protection of Prussia and Saxony; 3. that the king of Saxony, made duke of Warsaw, should have a military road to his new state, through Silesia; 4. that the dukes of Mecklenburg, Oldenburg and Coburg should be reinstated, by the emperor of the French, and, on the other hand, his brother Jerome should be acknowledged, by Alexander, as king of Westphalia, Joseph as king of Naples, Louis as king of Holland; and, 5. that the kingdom of Westphalia should be formed of the provinces ceded by Prussia, situated on the left bank of the Elbe, together with Brunswick, Hessia, &c. At the same time, 6. Alexander ceded the lordship of Jever to Holland, and promised, 7. to withdraw his troops from Moldavia and Walachia, and conclude peace with the Porte, under Napoleon's mediation. On the other hand, Russia received of the Prussian provinces, that of Bialystock, 4360 square miles, with 184,000 inhabitants. Moreover, the Russians evacuated Cattaro in consequence of the peace of Tilsit. In a secret article, Russia promised to unite with France against England, to secure the independence of neutral flags, and to induce the courts of Stockholm, Copenhagen and Lisbon to concur in the same arrangement. The terms of the peace between Napoleon and Frederic William III of Prussia, were contained, essentially, in that just described. Prussia was to cede the above-mentioned Polish provinces, and all the provinces between the Elbe and Rhine, to Napoleon, the circle of Cottbus to Saxony, and to close her ports against England. July 9, the peace with Prussia was signed, and count Kalckreuth agreed, with the prince of Neufchatel, that all Prussia should be evacuated by Oct. 1, if the heavy contributions should be paid up to that time, or security satisfactory to the intendant-general should be given for the payment. These terms could not be fulfilled, and Prussia continued a prey to French commissioners until it compounded for the impositions laid on it, after the lapse of a year, by the payment of 120,000,000 francs. Yet it remained continually exposed to attack on the part of the French, who occupied three fortresses on the Oder (Glogau, Kustrin, and Stettin), and from their allied states (Warsaw, Saxony and Westphalia), until, in 1813, its situation was changed. In the treaty with Russia, it was said, "The king of Prussia receives back half of his states at the intercession of the emperor of Russia." In 1822, Lewis Goldsmith published the secret articles of the peace of Tilsit, or rather the secret agreements made at the same. According to these, Russia was to have European Turkey; a prince of Napoleon's family was to receive the crown of Spain and Portugal; the temporal power of the pope was to cease; France to occupy the African States; Malta and Egypt to belong again to France; France to be supported by Russia in the conquest of Gibraltar; the Mediterranean to be open only to French, Russian, Spanish and Italian vessels; and Denmark to be indemnified by the Hanse towns in Northern Germany, if she would employ her fleet against England, &c.

Tilt-Hammer; a large and heavy hammer, put in motion by a water-wheel or steam-engine. Cogs being brought to bear on the tail of the hammer, its depression causes the head to be elevated, which, when liberated, falls with considerable force by its own specific gravity. Tilt-mills work on the same principle.

Tilting of Steel is the process by which blistered steel is rendered ductile. This is done by placing it under the tilt-hammer.

Timæus, of Locri, in Magna Græcia; a Pythagorean philosopher, and a teacher of Plato, who has called one of his dialogues by his name. Timæus employed himself chiefly in the study of nature. The genuineness of the work which goes under his name (On Nature and the Soul of the World) is doubted by Meiners, though defended by Tiedemann. It is inserted in Stanley's History of Philosophy. Meiners considers it merely as an abridgment of Plato's *Timæus*.

Timar and **Siamet** are military fiefs in Turkey. (See *Zaim*.)

Timber. A vast expense is every year occasioned by the premature decay of wood, employed in ships and other structures, which are exposed to vicissitudes of weather, and especially if they are subjected to the influence of warmth combined with moisture. Trees of different species vary greatly in the durability of their wood; yet none of the species commonly employed are capable of withstanding, for many years, the effect of unfavorable exposures and situations. The decay of timber is sometimes superficial and sometimes internal. In the former case, the outside of the wood first perishes, and crumbles away, and successive strata are decomposed, before the internal parts become unsound. In the other species, which is distinguished by the name of the *dry rot*, the disease begins in the interior substance of the wood, particularly of that which has not been well seasoned, and spreads outwardly, causing the whole mass to swell, crack, and exhale a musty odor. Different fungous vegetables sprout out of its substance; the wood loses its strength, and crumbles, finally, into a mass of dust. This disease prevails most in a warm, moist, and confined atmosphere, such as frequently exists in the interior of ships, and in the cellars and foundations of houses. Its destructive effects in ships of war have given rise, of late, to numerous publications. Some writers consider that the dry rot is not essentially different from the more common kinds of decay; but there seems to be sufficient reason for the distinction which has usually been drawn. The prevention of the evil has been attempted in various ways, and with some degree of success.—*Felling*. It is agreed by most writers that the sap of vegetables is the great cause of their fermentation and decay. Hence it appears desirable, if there is any season in which the trunk of a tree is less charged with sap than at others, that this time should be selected for felling it. The middle of summer and the middle of winter are, undoubtedly, the periods when the wood contains least sap. In the months of spring and autumn, in which the roots prepare sap, but no leaves exist to expend it, the trunk is overcharged with sap; and in many trees, as the maple and birch, sap will flow out at these seasons, if the trunk is wounded.

In summer, on the contrary, when the leaves are out, the sap is rapidly expended; and in winter, when the roots are dormant, it is sparingly produced; so that no surplus of this fluid apparently exists. From reasoning *a priori*, it would seem that no treatment would be so effectual in getting rid of the greatest quantity of sap as to girdle the tree, by cutting away a ring of alburnum, in the early part of summer, thus putting a stop to the further ascent of the sap, and then to suffer it to stand until the leaves should have expended, by their growth, or transpiration, all the fluid which could be extracted by them, previously to the death of the tree.* The wood would thus, probably, be found in the driest state, to which any treatment could reduce it in the living state. Buffon has recommended stripping the trees of their bark in spring, and felling them in the subsequent autumn. This method is said to harden the alburnum; but the cause is not very apparent, nor is the success at all certain.—*Seasoning*. At whatever period timber is felled, it requires to be thoroughly seasoned before it is fit for the purposes of carpentry. The object of seasoning is partly to evaporate as much of the sap as possible, and thus to prevent its influence in causing decomposition, and partly to reduce the dimensions of the wood, so that it may be used without inconvenience from its further shrinking. Timber seasons best when placed in dry situations, where the air has a free circulation round it. Gradual drying is considered a better preservative of wood than a sudden exposure to warmth, even of the sun; for warmth, abruptly applied, causes cracks and flaws, from the sudden and unequal expansion produced in different parts. Two or three years' seasoning is requisite to produce tightness and durability in the wood work of buildings. It must be observed that seasoning in the common way only removes a portion of the aqueous and volatile matter from the wood. The extractive, and other soluble portions, still remain, and are liable to ferment, though in a less degree, whenever the wood reabsorbs moisture. Such, indeed, is the force of capillary attraction, that wood, exposed to the atmosphere in our climate, never gives up all its moisture.—*Preservation of Timber*. When wood is to be kept in a dry situation, as in the interior of houses, no other preparation is necessary than that of thorough seasoning. But when it is to be exposed to the vicissitudes of weather, and, still more, when it is to remain in a warm and moist atmosphere, its preservation often becomes extremely difficult. Numerous experiments have been made, and many volumes written, upon the preservation of timber, and the prevention of the dry rot; but the subject is not yet brought to a satisfactory conclusion. The methods which have hitherto been found most successful, consist in extracting the sap, in excluding moisture, and in impregnating the vessels of the wood with antiseptic substances.—For extracting the sap, the process of *water seasoning* is recommended. It consists in immersing the green timber in clear water for about two weeks, after which it is taken out, and seasoned in the usual manner. A great part of the sap, together with the soluble and fermentable matter, is said to be dissolved or removed by this process. Running water is more effectual than that which is stagnant. It is necessary that the timber should be sunk, so as to be completely under water, since nothing is more destructive to wood than partial immersion. Mr. Langton† has proposed to extract the sap by means of an air-pump, the timber being enclosed in tight cases, with a temperature somewhat elevated, and the sap being discharged in vapor by the operation of the pump. It appears extremely probable, that if trees were felled in summer, and the buts immediately placed in water without removing the branches, a great part of their sap would be expended by the vegetative process alone, and replaced by water. It is well known that branches of plants, if inserted in water, continue, for some days, to grow, to transpire, and to perform their other functions. This they probably do at the expense of the sap, or assimilated fluid, which was previously in them, while they replace it by the water they consume. This state of things continues until the juices are too far diluted to be capable of any longer sustaining life.—The *charring* of timber, by scorching or burning its outside, is commonly supposed to increase its durability; but, on this subject, the results of experiment do not agree. Charcoal is one of the most durable of vegetable substances; but the conversion of the surface of wood into charcoal does not necessarily alter the character of the interior part. As far, however, as it may operate in excluding worms, and arresting the spreading of an infectious decay, like the dry rot, it is useful. Probably, also, the pyroligneous acid, which is generated when wood is burnt, may exert a preservative influence. The exclusion of moisture, by covering the surface with a coating of paint, varnish, tar, &c., is a well-known preservative of wood which is exposed to the weather. If care is taken to renew the coat of paint as often as it decays, wood, on the outside of buildings, is sometimes made to last for centuries. But painting is no preservative against the internal or dry rot. On the contrary, when this disease is begun, the effect of paint, by choking the pores of the wood, and preventing the exhalation of vapors and gasses which are formed, tends rather to expedite than prevent the progress of decay. Paint itself is rendered more durable by covering it with a coating of fine sand. Wood should never be painted which is not thoroughly seasoned. The impregnation of wood with tar, bitumen, and other resinous substances, undoubtedly promotes its preservation. It is the opinion of some writers,* that "woods abounding in resinous matter cannot be more durable than others;" but the reverse of this is proved, every year, in the pine forests of this country, where the *lightwood*, as it is called, consisting of the knots and other resinous parts of pine trees, remains entire, and is collected for the purpose of affording tar, long after the remaining wood of the tree has decayed. A coating of tar or turpentine, externally applied to seasoned timber, answers the same purpose as paint in protecting the wood, if it is renewed with sufficient frequency. Wood impregnated with drying oils, such as linseed oil, becomes harder, and more capable of resisting moisture. It is frequently the custom, in this country, to bore a perpendicular hole in the top of a mast, and fill it with oil. This fluid is gradually absorbed by the vessels of the wood, and penetrates the mast to a great distance. Animal oils, in general, are less proper for this purpose, being more liable to decomposition. The preservative quality of common salt (muriate of soda) is well known. An example of its effect is seen in the hay of salt marshes, which is frequently housed before it is dry, and which often becomes damp afterwards, from the deliquescence of its salt, yet remains unchanged for an indefinite length of time. In the salt mines of Poland and Hungary, the galleries are supported by wooden pillars, which are found to last unimpaired for ages, in consequence of being impregnated with the salt, while pillars of brick and stone, used for the same purpose, crumble away, in a short time, by the decay of their mortar. Wooden piles, driven into the mud of salt flats and marshes, last for an unlimited time, and are used for the foundations of brick and stone edifices. In canals, which have been made in the salt marshes about Boston, and other places, trunks of oak trees are frequently found, with the heart wood entire and fresh, at a depth of five or six feet below the surface. At Medford, Massachusetts, the stumps of trees are found standing in the gravelly bottom of the salt marsh, where the tide rises in the canals four or five feet above them. This bottom must originally have constituted the surface of the ground, and must have settled long enough ago for the marsh mud to have accumulated, as it has done for miles round, apparently since that period. The application of salt, in minute quantities, is said rather to hasten than prevent the decay of vegetable and animal bodies. Yet the practice of docking timber, by immersing it, for some time, in sea water, after it has been seasoned, is generally admitted to promote its durability. There are some experiments which appear to show, that, after the dry rot has commenced, immersion in salt water effectually checks its progress, and preserves the remainder of the timber.† In some of the public ships, built in the U. States, the interstices between the timbers, in various parts of the hull, are filled with dry salt. When this salt deliquesces, it fills the pores of the wood with a strong saline impregnation; but it has been said, in some cases, to render the inside of the vessel uncomfortably damp. If timber is immersed in a brine made of pure muriate of soda, without the bitter deliquescent salts which sea water contains, the evil of dampness is avoided. A variety of other substances, besides common salt, act as antiseptics in preventing the dry rot, and the growth of the fungus which attends it. Nitre and alum have been recommended for this purpose; and some of the metallic salts are considered still more effectual. Of these, the sulphates of iron, copper and zinc have the effect to harden and preserve the timber. Wood boiled in a solution of the former of these, and afterwards kept some days in a warm place to dry, is said to become impervious to moisture. Corrosive sublimate, which is recommended by sir H. Davy, is a powerful preservative of organized substances from decay, and proves destructive to parasitic vegetables and animals; but its safety, in regard to the health of crews, if used in large quantities about the wood of a ship, may be considered as doubtful. An opinion has been supported, in this country, that the decay of timber in ships, by dry rot, is owing to the impure atmosphere generated by bilge water, and that it is to be remedied by constructing ships with a view to their free and effectual ventilation. (Bigelow's *Technology*.)

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* See McWilliam on the *Dry Rot*, pp. 151 and 158.

† Repertory of Arts, 1826. Franklin Journal, ii. and vi.

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* Tredgold's Elementary Principles of Carpentry, page 166.

† The British frigate Resistance, which went down in Malta harbor, and the Eden, which was sunk in Plymouth sound, were both affected with dry rot. These ships, after remaining many months under water, were raised, and it was found that the disease was wholly arrested. Every vestige of fungus had disappeared, and the ships remained in service afterwards, perfectly sound from any further decay. (Supplement to the Encyclopædia Britannica, iii. 682.)

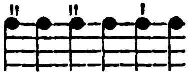
Timbrel. (See *Tambourine*.)

Timbuctoo, or **Tombuctoo**; a city of Africa, for many centuries the great emporium of the interior trade of that continent, situated eight miles to the north of the Niger. (q. v.) This city has excited much interest, and has only recently been visited by any European traveller; and the information as yet possessed respecting it is exceedingly vague. Leo Africanus gives a description of this city, which he had visited twice. According to him, Timbuctoo was founded in the year of the Hegira 610 (1218, A. D.), and, having extended its dominion over all the neighboring states, acquired that commercial prosperity for which it has ever since been distinguished. At the time when he visited it, it contained many persons of great opulence, particularly foreign merchants. The king held a splendid court, and had an army consisting of 3000 cavalry, and a numerous infantry. The royal palace and principal mosque were built of stone, but the houses of the ordinary inhabitants were constructed in the form of bells —the walls composed of stakes or hurdles, and the roofs of reeds. In 1811, Robert Adams, an illiterate American sailor, was, according to his own account (see his *Narrative*, London, 1816, the misstatements of which are pointed out in the North American Review, vol. 5 and 22), after being shipwrecked near cape Blanco, carried as a slave to Timbuctoo, and detained there six months. A more recent account was given by captain Riley, an American, who suffered shipwreck on the coast of Sahara, in 1815. The account was given to Riley by Sidi Hamet, an intelligent Arab merchant, by whom he was purchased and carried to Mogadore. (See Riley's *Narrative of his Shipwreck and Captivity*, New York, 1817.) In 1826, major Laing reached Timbuctoo, where he remained for upwards of a month. Several letters were received from him while there, stating that, in point of extent, it did not exceed four miles in circuit, but that in other respects it answered his expectations. He was soon after obliged to leave the city, and was murdered three days after quitting it: his papers have not been recovered. (See *Laing*.) In 1828, Caillié visited Timbuctoo (or Temboctoo, as he calls it), and resided there above a fortnight. According to him, it consists of ill-built earthen houses, situated in the midst of deserts of moving sand, and containing seven mosques. He estimates the population at only 10,000 or 12,000, chiefly negroes, who are Mohammedans. It is entirely supported by commerce, being the depot of salt from the Taudeny mines, and of European goods brought by the caravans from Morocco, as well as those from Tunis and Tripoli, which go by the way of Ghadamis. These goods are embarked for Jenne (q. v.), to be exchanged for the gold, slaves, and provisions, with which that city exclusively supplies Timbuctoo. We may expect more full accounts of this part of the country from the expedition now (1832) ready to sail from England, under the direction of the Landers. (q. v.) Lon. of Timbuctoo, according to Rennell, 2° 30′ E.; lat. 16° 30′ N.; according to the map prepared by Jomard, from Caillié's notes, lat. 17° 50′ N.; lon. 3° 34′ W. (See Caillié's *Travels to Timbuctoo*, from the French, Lond., 1830.)

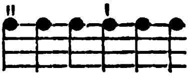
Time is the general relation in which all things perceptible stand to each other, in regard to their origin, continuance and dissolution. It is a form necessary to enable the mind to unite successive existence. It is not an external object, nor a mere relation of individual things to each other, but is infinite, like the phenomena which are submitted to this form in our perceptions. (See *Kant*, volume vii, p. 304.) We speak of a distinct period of time (relative time) only in reference to that which fills time. Accordingly, we also distinguish the past, present and future as its component parts, which pass continually each into the succeeding. In order to measure the succession and duration of particular things and events, the great motions of the heavenly bodies, which always remain the same, particularly of those bodies which are most closely connected with the earth, have been taken as standards; hence the physical or astronomical time. Such a measure of time is afforded, by nature herself, in the apparent daily revolution of the heavenly arch, i. e. the rotation of the earth on its axis. This gives rise to the sidereal time. (q. v.) But as the sidereal time will not serve for the purposes of common life, it was necessary to resort to the solar time. (q. v.) The latter, indeed, is unequal, and neither agrees accurately with the sidereal time, nor with that indicated by a clock; but this evil is remedied by the equation of time (q. v.), through which the true solar time is changed into mean time.

Time, in music and rhythm; the measure by which a series of tones or sounds is uniformly divided; next, the various modes of this division, and the division itself (as when we say, This singer does not keep *time*). Time has nothing to do with the height or depth of the tones, and can exist without these distinctions, but not without a variety of duration and accent, since without such variety we cannot conceive a connected series of tones or motions (for in dancing, too, we speak of *time*) as constituting a whole. In order to do this, it is necessary that the successive sounds or motions should appear to us as portions of divisions recurring periodically, because in this uniform recurrence we perceive that uniformity in variety which is essential to time. Time, therefore, in music, corresponds to symmetry in those objects which occupy space. But it is not only necessary to perceive that each division of the series of tones or motions, which is called in music a *bar*, is of equal duration with the others; all the bars must also be perceived to correspond with each other as to the parts of which they are composed. Otherwise, the perception of uniform progress would be destroyed; if, for instance, $\frac{3}{4}$ time and $\frac{4}{4}$ should continually and regularly follow each other in such a way that each bar should occupy precisely the same time, the parts of one bar would be at variance with those of the other; the accent would not be the same; the feeling of symmetry and a well-ordered whole would be destroyed. As symmetry delights through the eye, so time does through the ear. (See *Rhythm*, *Music*, *Dancing*.) Time, again, varies according to its component parts; hence the different kinds of time. It varies according to the number of the parts which compose it, and the accent depending thereupon. First, there is even time (i. e. time the parts of which form an even number), and uneven. The former is simple if it consists of two, the latter if it consists of three chief parts. The simple even time is $\frac{2}{4}$ and $\frac{2}{8}$ time; the compound is $\frac{4}{4}$ time (also marked thus, C), and $\frac{8}{8}$ time. The $\frac{2}{4}$ time, according to Mr. Apel, a German, who has written much on rhythm, &c., is only $\frac{4}{4}$ on a reduced scale: still quicker and easier is the $\frac{2}{8}$ time, which is not much used: on the other hand, $\frac{2}{2}$ time, or allabreve time, is performed more slowly and heavily than $\frac{2}{4}$ time, and allows, therefore, no smaller notes than an eighth. The even time cannot well have more than eight even portions, because a greater number could not be perceived as forming a regular period, so that the essence of time would be lost. The uneven time, which affords a greater variety, can be reduced to the $\frac{3}{4}$ time. A shorter duration of the three equal parts gives rise to the $\frac{3}{8}$ time; a longer duration to the $\frac{3}{2}$ time. By multiplying the three, we obtain the heavy $\frac{6}{2}$, $\frac{6}{4}$, and the easy $\frac{6}{8}$, $\frac{9}{4}$, $\frac{9}{8}$, and the $\frac{12}{8}$ time, which form the rest of the uneven kinds of time. The two latter are not often used. Beyond twelve uneven parts, there would, again, be no distinct perception; therefore the time could not be distinguished. Other uneven numbers, as 5 and 7, do not form kinds of time, because, according to Apel, they consist of even and uneven numbers. Therefore all uneven times were formerly called *triple times*; as only those uneven times which originate from three parts, are natural to the ear. A time consisting of one portion only would be impossible, as time requires a uniformity of the various, a periodicality. From all this it appears that the kinds of time are not arbitrary inventions, as Rousseau seems to think. Uneven time is considered livelier than even. As to the parts of time, they derive different values from the accent. Accordingly we distinguish good and bad notes (notes being the parts of divisions of time, or bars, in music), *nota buona*, and *nota cattiva*, *thesis* and *arsis*. A good or heavy note is that which has the accent, and in vocal music requires a long syllable; a bad one has a short syllable. Good notes, in the even species of time, are the first (thesis), which has absolutely the greatest stress, because it decides the beginning of the bar. If the half bars of $\frac{4}{4}$ time are changed into quarters, the first and third quarters receive the accent, the latter, however, a weaker one. A still weaker accent is given to the third and sixth eighth, if the quarters are changed into eighths. In the uneven time, the first $\frac{1}{2}$ has again the accent in the $\frac{3}{2}$ time, and in $\frac{6}{4}$ the first and fourth $\frac{1}{4}$, have the greatest stress, the second and fifth a proportionably weaker stress, and so on. That the various species of time are distinguished by variety of accent, even if the notes are of equal value, we see, e. g. by a comparison of $\frac{3}{2}$ and $\frac{6}{4}$, also of $\frac{3}{4}$ and $\frac{6}{8}$ time; because

$\frac{3}{2}$ is accentuated thus,

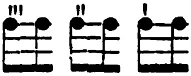


$\frac{6}{4}$ " "

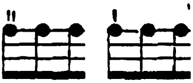


further,

$\frac{3}{4}$ " "



$\frac{6}{8}$ " "



This the composer has to refer to the words which he intends to set to music. Franco of Cologne is considered the inventor of modern time. (See *Music, History of.*) With the Greeks, the time was indicated at the beginning of the chorus, originally by wooden shoes (κρουπέζια), at a subsequent period by iron ones; with the Romans by the *scamillum*, or *scabillum*.

It is of the greatest importance, for the performance of musical pieces, to ascertain the precise duration of the notes, i. e. the tempo. (q. v.) The usual expressions, *andante*, *adagio*, *allegro*, &c., are too vague. Various attempts, therefore, have been made, at different times, in London and Paris, to invent a machine which would enable the composer to indicate, with the greatest accuracy, the duration of the unit of the bar. Some of these have been commended by the academy of arts and sciences at Paris. These inventions have not met with much favor in Germany till lately, when one of the most successful has been made by Stöckel, at Burg, Germany, whose musical chronometer is a machine of the form of a common-sized clock. It has a dial, with numbers, to which the hand is turned, according to the directions given by the composer at the beginning of the piece. A pendulum, now put in motion, determines exactly the duration of the unit note. Mälzel of Vienna has brought this machine to great perfection. It is used in orchestras; and distinguished composers, as Beethoven, have determined the time of their compositions by this instrument. It can be bought in every considerable music shop in Leipsic and Vienna. But a very simple and efficient way of determining the time accurately is laid down, by Gottf. Weber of Mayence, in the Leipsic Musical Gazette. He says, "The simplest and surest measure of time is a simple pendulum, i. e. a thread with a leaden bullet at one end. It is well known that a pendulum swings quicker the shorter it is. It is, therefore, only necessary to write, at the beginning of a musical piece, the length of a pendulum, the vibrations of which correspond to the desired duration of the unit note. Thus, *allegro* 8″ $\frac{2}{4}$ would signify that in this allegro the unit note $\frac{1}{4}$ is to correspond to the vibration of a pendulum eight inches long, Rhenish measure. This way of indicating the time has this advantage, that it can be easily understood every where, and easily executed, as the niceties observed in astronomical calculations with the pendulum are not requisite here. It must only be remembered that, with $\frac{2}{4}$, $\frac{6}{4}$ and $\frac{4}{4}$ time, a vibration of the pendulum indicates the duration of $\frac{1}{4}$; with $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{6}{8}$ time, it indicates $\frac{1}{8}$. When military pedantry in Germany had reached its acme, before the French revolution, chronometers were used in some regiments, which were held by the drum-major, and determined by their beats the duration of each step, which he indicated by signs to the drummers. We have lately heard that they are again used by some regiments in Russia and Austria.

Times; one of the most respectable English papers, distinguished for activity, wide circulation, and size, and, at the present time, most in the confidence of the ministry, without, however, defending all its measures, indiscriminately. In 1831, not less than 4,328,025 copies, or about 13,827 a day, were sold. The Evening Mail, which appears every other day, is the Times without the advertisements.

Timocracy; according to Aristotle, that form of government whose laws require a certain property to enable a citizen to be capable of the highest offices. The word is derived from τιμή, which signifies both honor and valuation of property, and κρατος, power.

Timoleon; a native of Corinth, equally distinguished as a general and a lawgiver, a lover of liberty and a patriot. There is one act, however, of Timoleon, which casts a shade over his character,—the murder of his brother Timophanes,—to which he was a witness and accessary, if he did not actually assist in its execution. Yet Timoleon's conduct may be in some measure justified by the motives. Timophanes had aimed at the sovereign power, and had already begun to play the part of a tyrant. The remonstrances of Timoleon had no effect upon his brother, and he, therefore, determined to purchase the freedom of his fellow citizens, even at the price of his brother's death, should that step prove necessary. Going to his brother, at the head of several armed men, and finding himself unable to prevail upon him to abandon his ambitious projects, he stood aside, with his head covered, while his followers put Timophanes to death. Joyful as the intelligence of the tyrant's death might be to his fellow citizens, yet, to most minds, there was something hateful in the idea of fratricide; and Timoleon bitterly reproached himself for the act. He then went into voluntary exile. Twenty years afterwards, when the Syracusans demanded aid from Corinth against the tyrant Dionysius the younger, Timoleon was recalled, and placed at the head of the troops sent to their relief. He compelled Dionysius to leave Syracuse, and also forced the Carthaginians to renounce their claims to Sicily (B. C. 340). After having restored liberty to Sicily, recalled the exiles and fugitives, and erected public buildings in place of the fortresses built by the tyrant, he gave the citizens a new and more stable constitution, voluntarily laid down his power, which he might have retained, and retired into private life. His reward was the general esteem of the Sicilians, among whom he spent the rest of his life. They called him their benefactor and father, and took no measures of importance without consulting him. All Sicily mourned his death, which occurred at an advanced age; and a yearly solemnity was celebrated in honor of him. Thus lived and died Timoleon, one of the greatest and noblest characters, not only of Greece, but of all ages and countries.

Timon of Athens; a celebrated misanthrope, who lived at the time of the Peloponnesian war—a period when a general corruption of manners was beginning to supplant the ancient simplicity which had characterized his countrymen. Timon, who united a strict integrity with much wit, seems to have been exasperated, partly by the ingratitude of some of his fellow citizens, and partly by the rapid progress of corruption; and, in his words and actions, he displayed a gloomy state of feelings. Like Socrates and Diogenes, he espoused the cause of virtue, but injured a good cause by the bitterness of his sarcasms and the malignity of his irony. His conduct gained him the epithet of the *misanthrope*; and he was made a subject of ridicule by the comic poets. Aristophanes says, he is surrounded with a hedge of thorns, and that every one shuns him as a scion of the Furies Lucian has a witty dialogue, Timon, of which he is the subject; and Shakspeare's Timon of Athens has rendered his name and character familiar to the English reader.

Timon the Phliasian, a philosopher and physician, the most celebrated disciple and friend of Pyrrho, and, consequently, a follower of the sceptic philosophy, was born at Phlius, and flourished in the time of Antigonus, king of Macedonia, and Ptolemy Philadelphus, during the last half of the third century B. C. He attacked the dogmatists, and maintained a suspension of judgment as alone productive of tranquillity of mind. Thirty comedies and sixty tragedies are also ascribed to him; but of his numerous works nothing remains, except a few fragments of his *silli*, the loss of which is much to be regretted. They consisted of three books, the first of which was narrative, and the others in the form of dialogues. They were written in ridicule of the dogmatic philosophy. The fragments of Timon are contained in Langheinrich's *De Timone Sillographo* (1720), and Paul's treatise *De Sillis Græcorum* (Berlin, 1821). The ancients celebrate his industry, learning, and philosophical indifference to objects which excite the wonder, anxiety, grief and terror of the multitude.

Timoroso (Italian for *fearful*); a term applied to music, if the style of performance expresses awe and dread.

Timotheus, one of the most celebrated lyric poets and musicians of antiquity, who flourished at the court of Philip of Macedon, and his son Alexander, about the middle of the fourth century before the Christian era. He was a native of Miletus in Caria; and Pausanias attributes to him the completion of the lyre, by the addition of four new strings.

Timothy, a disciple of St. Paul, was born in Lycaonia, Asia Minor, probably at Lystra, of a pagan father and Christian mother. He was yet young when he became associated (A. D. 51) with the great apostle in his ministry to the Gentiles; and he accompanied Paul to Thessalonica, Philippi, and Beræa. He was then left in the latter city alone; and, after spending some time there and at Thessalonica, during a violent persecution, he again joined his master at Corinth. After preaching the gospel in Macedonia, Achaia, and other places, he is supposed to have shared the captivity of Paul at Rome, and to have suffered martyrdom there during the reign of Nerva (A. D. 97). Two letters addressed to him by St. Paul form a part of the New Testament.

Timothy Grass (*phleum pratense*) is readily recognised by its long cylindrical spikes. It forms very excellent fodder, and horses prefer it to the other grasses; but it does not yield a very abundant crop. The root becomes bulbous in very dry grounds. It is a native of Europe, but is commonly cultivated, as well as naturalized, in the northern parts of the U. States.

Timour, called also **Timour Lenk** (that is, *the lame*), and, by corruption, **Tamerlane**, one of the most celebrated of the Oriental conquerors, was born in the village of Sebzar, in the territory of Kesh, about forty miles from Samarcand, in the year 1335. His ancestors were chiefs of the districts, and remotely related to the family of Gengis. At the time of his birth, great anarchy prevailed in his native country, which suffered from an invasion of the Getes, against whom he acted, at the head of a body of his countrymen, and endured much diversity of fortune, until at length, being joined by a large body of volunteers, he was enabled to expel the Getes from Transoxiana. A dispute with his confederate and brother-in-law, Houssein, led to a brief civil war, but the latter being defeated and put to death, a general diet, in 1370, seated him on the throne of Zagatai, upon which he made Samarcand the seat of his empire. His elevation, so far from satisfying his ambition, only opened further prospects to it; and, in a very few years, he reunited to Zagatai its former dependencies, Candahar and Carizme, overran Persia, passed as a conqueror through the whole course of the Tigris and Euphrates, reduced the Christians of Georgia, subdued the kingdom of Cashgar, and his emirs even crossed the river Irtish into Siberia. He also despatched an army into Western Tartary, under a fugitive prince named Toctamish, who, having established himself by its means, turned his arms against his benefactor, and obliged Timour to contend for his capital and empire. He was, however, finally defeated, and, in the pursuit, Timour captured a duke of Russia. In 1390, he invaded Hindoostan, and, rapidly penetrating to Delhi, soon completed the subjugation of the country. While on the banks of the Ganges, he was informed of great disturbances on the confines of Georgia and Anatolia, and of the ambitious projects of the Turkish sultan, Bajazet. He soon made arrangements to encounter this new enemy, whom, after a war of the most barbarous ferocity, which lasted two years and upwards, he encountered and conquered, and made captive, in the decisive battle of Angora, fought in 1402. Concerning the treatment of his prisoner, different accounts are given, the most common of which states that he was carried about by the conqueror in an iron cage, against the bars of which, he, in a few months, beat out his brains, in rage and despair. The conquests of the Tartar now extended from the Irtish and Volga to the Persian gulf, and from the Ganges to the Archipelago; and the want of shipping alone prevented him from crossing into Europe. His inordinate ambition was not yet satisfied, and he was making mighty preparations for an invasion of China, when death arrested his progress, at his camp at Otrar; and he expired in 1405, in the seventieth year of his age, having previously declared his grandson, Mahomet Jehan Ghiz, his successor. He left fifty-three descendants, and a name much revered in the East, where his posterity, until lately, still preserved the title of the Mogul emperors, although the dominion had passed into other hands. Timour was tall and corpulent, with a wide forehead, large head, and pleasing countenance; but he was maimed in one hand, and lame on the right side. He conducted his government alone, and without favorites, but was, in the highest degree, fierce and fanatical in his religion; and, although no conquests were ever attended with greater cruelty, devastation, and waste of human life, he affected the title of a benefactor to mankind. Happily, his ambition was too gigantic for its consequences to last, and his dominions rapidly became divided as before. Yet he was not a mere barbarian conqueror, if the institutes are to be regarded as genuine, which, under the title of the Institutions of Timour, have been made known to us by a version from the Persian, executed by major Davy and professor White (Oxford, 1783). (See Gibbon's *Decline and Fall*, ch. 65.)

Tin was known to the ancients in the most remote ages. The Phœnicians procured it from Spain and from Britain, with which nations they carried on a very lucrative commerce. It appears to have been in common use in the time of Moses. It is rather a scarce metal, occurring in the earth in but two forms, namely, that of the peroxide, usually contaminated with the oxides of iron and manganese, and of a double sulphuret of tin and copper, the last of which, however, is an exceedingly rare mineral. (For a description of these ores, see the end of the present article.) Cornwall has been celebrated for its tin mines from the remotest ages; and it still continues the most productive country in this metal in all Europe. The mountains which separate Galicia from Portugal were also very productive of tin in ancient times, and still continue unexhausted. The mountains between Saxony and Bohemia have been wrought as tin mines for several centuries, and still continue productive. Mines of it occur in the peninsula of Malacca, in India, in Chile and in Mexico. The tinstone (or peroxide of tin) is the only ore used for obtaining metallic tin. The first process to which it is subjected is grinding. The ground ore is then washed, which removes the impurities; for the specific gravity is so high that it is easy to wash away the earthy matter, and even some of the foreign metallic ores with which it is often mingled. But there are other bodies so nearly of the same specific gravity of the tin ore that they cannot be thus removed. The next process is roasting the ore in a reverberatory furnace: this expels the sulphur and arsenic with which the foreign matters were combined, and thus diminishes their specific gravity so much that they can now be washed away. The ore, thus freed as much as possible from foreign matter, is mixed with the requisite fuel and limestone, and heated strongly in a reverberatory furnace, so as to bring the whole into the state of fusion, which is kept up for about eight hours. The lime unites with the earthy matters still mixed with the ore, and flows with them into a liquid glass, while the coal reduces the oxide of tin to the metallic state. It falls by its weight to the bottom, and is, at the end of about eight hours, let out by tapping a hole in the furnace, which had been filled with clay. The tin thus obtained is still very impure. It is returned to the furnace, and exposed to a heat just sufficient to melt it. The pure tin flows out into a kettle, while a quantity of impurities remains behind. The tin in the kettle is kept in fusion and agitated, by which a quantity of impurity is accumulated on its surface. It is skimmed off, and the tin, now refined, is cast into blocks, weighing each about 300 pounds.—Tin, when pure, has a fine white color, like silver; and, when fresh, its brilliancy is great. It has a slightly disagreeable taste, and emits a peculiar smell when rubbed. Its hardness is between that of gold and lead. Specific gravity, 7.28. It is very malleable; tin leaf, or *tin foil*, as it is called, is about one thousandth part of an inch thick; and it might be beat out into leaves as thin again, if such were wanted for the purposes of art. Its ductility and tenacity are much inferior to those of most of the metals known in early times. It is very flexible, and produces, while bending, a remarkable crackling noise, sometimes called the *cry of tin*. It melts at 442° Fahr. When cooled slowly, it may be obtained crystallized in the form of a rhomboidal prism. After a short exposure to the air, it loses its lustre, and assumes a grayish-black color, but undergoes no further alteration. Neither is it sensibly altered by being kept under water. When tin is melted in an open vessel, its surface becomes very soon covered with a gray powder, which is an oxide of the metal. If the heat be continued, the color of the powder gradually changes, and at last it becomes yellow. It forms two oxides. The *protoxide* has a black color, but when combined with water, is white. The *peroxide* is yellow, and, in certain circumstances, is transparent, and nearly white. The *black oxide*, or *protoxide*, may be obtained by dissolving tin in muriatic acid till a saturated solution is obtained, precipitating the liquid by means of carbonate of soda, and collecting the precipitate on a filter, washing and drying it at a temperature not exceeding 180° Fahr. By this process a white powder is obtained, which is a hydrated protoxide. It requires to be raised to a red heat in a glass retort to expel the water, after which it is a black powder, devoid of lustre, tasteless, and insoluble in water. When heated in the open air, it takes fire, burns brilliantly, and is converted into peroxide. It is distinguished from the peroxide of tin not only by its color, but by being insoluble in ammonia and in carbonate of potash. The other oxide exists abundantly in nature, though rarely free from admixture with iron. When pure, its color is yellow. It is translucent, or almost transparent, and crystallizes in octahedra with square bases. Specific gravity 6.6. It is insoluble in all acids, until it has been fused with an alkali. Tin combines with chlorine in two proportions, forming the *protochloride of tin*, and the *perchloride of tin*. The former of these may be formed by heating together an amalgam of tin and calomel, or by evaporating to dryness the protomuriate of tin, and fusing the residue in a closed vessel. It has a gray color, a resinous lustre and fracture, and takes fire when heated in chlorine gas, and is converted into the perchloride. The perchloride of tin has long been known under the name of *fuming liquor of Libavius*, because it was discovered by Libavius, a chemist of the sixteenth century. It is usually prepared by mixing together an amalgam of tin and corrosive sublimate, and distilling with a very moderate heat. At first, a colorless liquor passes into the receiver, consisting chiefly of water: then the fuming liquid rushes all at once into the receiver in the state of vapor. It is colorless, like water, and very fluid. When three parts of it are mixed with one of water, the mixture condenses into a solid mass. It acts with great violence on oil of turpentine. There are compounds, also, of tin with bromine and with iodine. Tin also combines with phosphorus and with sulphur. One combination of tin and sulphur (the persulphuret) has long been known in chemistry under the name of *aurum mosaicum*, or *mosaic gold*. It is formed by mixing twelve parts tin, seven parts sulphur, three parts mercury, and three parts sal-ammoniac, and exposing the mixture to a strong heat, for eight hours, in a black-lead crucible, to the top of which an aludel is luted. The mosaic gold sublimes. It may also be formed by mixing together in a retort equal parts of sulphur and oxide of tin, and distilling. When pure, it is in the form of light scales, which readily adhere to other bodies, and which have the color of gold. Tin and arsenic may be alloyed by fusion. The alloy is white, harder and more sonorous than tin. Tin and antimony may be united together in various proportions. Equal parts of tin and molybdenum melt into a blackish-gray, granular, brittle, soft mass. Tin does not combine readily with iron. An alloy, however, may be formed by fusing them in a close crucible, completely covered from the external air. *Tin plate* is formed by dipping into melted tin thin plates of iron, thoroughly cleaned by rubbing them with sand, and then steeping them twenty-four hours in water acidulated by bran or sulphuric acid. The tin not only covers the surface of the iron, but penetrates it completely, and gives the whole a white color. Tin and zinc may be easily combined by fusion. This alloy is often the principal ingredient in the compound called *pewter*. Lead and tin may be combined in any proportion by fusion. This alloy is harder, and possesses much more tenacity than tin; and these qualities are at a maximum when the alloy is composed of three parts of tin and one of lead. The presence of tin seems to prevent, in a great measure, the noxious qualities of the lead from becoming sensible when food is dressed in vessels of this mixture. This result is often employed to tin copper vessels; and the noxious nature of lead having raised a suspicion that such vessels, when employed to dress acid food, might prove injurious to the health, Mr. Proust was employed by the Spanish government to examine the subject. The result of his experiments was, that vinegar and lemon-juice, when boiled long in such vessels, dissolve a small portion of tin, but no lead, the presence of the former metal uniformly preventing the latter from being acted on. The vessels, of course, are innocent. What is called *ley pewter* is often scarcely any thing else than this alloy. *Tin foil*, too, is almost always a compound of tin and lead. It is in the formation of these alloys that tin is principally employed. Its oxides are used in enamelling, and to polish the metals; and its solution in nitro-muriatic acid is an important mordant in the art of dyeing, rendering several colors, particularly scarlet, more brilliant and permanent.

Tin Ores. These are but two in number, *tin ore* and *tin pyrites.* The first of these occurs crystallized, and in a great variety of forms, but which may all be derived from an octahedron with a square base, the angle over the apex being 112° 10′. The majority of the crystals have the general figure of a right square prism, with four-sided pyramids at each extremity. The cleavages take place parallel with the sides of this prism, and with both its diagonals. The crystals may be cleaved also parallel to the sides of the above-named octahedron, but with difficulty. The prisms are sometimes vertically streaked. Lustre adamantine; color various shades of white, gray, yellow, red, brown and black; streak pale gray; in some varieties it is pale brown; semi-transparent, sometimes almost transparent, and at others opaque; brittle; hardness about that of feldspar; specific gravity 6.96. Tin ore presents itself in a great variety of compound or macled crystals. It also occurs reniform, rarely in botryoidal shapes, and massive, with a granular or columnar composition, the individuals being strongly connected, and the fracture uneven. The *wood tin* of the Cornish mines is a mere variety of tin ore. The following ingredients were found in a specimen of crystallized, and in a massive tin ore:—

	Crystallized.	Massive.
Oxide of tin, ...	99.00	95.00
Oxide of iron, ...	0.25	5.00
Silex, ...	0.75	0.00

In its greatest purity, it contains nothing but oxide of tin. Alone, it does not melt before the blow-pipe, but is reducible when in contact with charcoal. It occurs disseminated through granite, also in beds and veins. It also occurs in pebbles, and is extracted in this shape from stream-works. The variety called *wood tin* has hitherto been found only in these repositories. There are but few countries in which the present species is met with in considerable quantities. These are Saxony, Bohemia, Cornwall, in Europe, and the peninsula of Malacca, and the island of Banca, in Asia. Within a few years, small crystals have been met with at Goshen, in Massachusetts, in a granite rock, accompanied by tourmaline and spodumene. *Tin pyrites*, the other ore of tin, occurs massive, with a granular composition; fracture uneven, imperfectly conchoidal; lustre metallic; color steel-gray, inclining to yellow; streak black; opaque; brittle; hardness about that of fluor; specific gravity 4.35. Before the blow-pipe, sulphur is driven off, and the mineral melts into a blackish scoria, without yielding a metallic button. It is soluble in nitro-muriatic acid, during which the sulphur is precipitated. It consists of

Tin, ...	34.00
Copper, ...	36.00
Iron, ...	2.00
Sulphur, ...	25.00

It is found only at St. Agnes, in Cornwall.

Tincal. (See *Boracic Acid.*)

Tincture; a solution of any substance in spirit of wine. Rectified spirit of wine is the direct menstruum of the resins, and essential oils of vegetables, and totally extracts these active principles from sundry vegetable matters, which yield them to water not at all, or only in part. It dissolves, likewise, the sweet, saccharine matter of vegetables, and generally those parts of animal bodies in which their peculiar smell and taste reside. The virtues of many vegetables are extracted almost equally by water and rectified spirit; but in the watery and spirituous tinctures of them there is this difference, that the active parts in the watery extractions are blended with a large proportion of inert gummy matter, on which their solubility in this menstruum in a great measure depends, while rectified spirit extracts them almost pure from gum. Hence, when the spirituous tinctures are mixed with watery liquors, a part of what the spirit had taken up from the subject generally separates and subsides, on account of its having been freed from that matter, which, being blended with it in the original vegetable, made it soluble in water. This, however, is not universal, for the active parts of some vegetables, when extracted by rectified spirits, are not precipitated by water, being almost equally soluble in both menstrua.

Tindal, Matthew, LL. D., a controversial writer, born about 1657, in Devonshire, where his father was a clergyman, was admitted of Lincoln college, Oxford, in 1672, elected a fellow of All Souls' college, and afterwards became a doctor of law. At the commencement of the reign of James II, he turned Roman

Catholic, but, in 1687, he returned to the church of England. Having concurred in the revolution, he was admitted an advocate, and sat as a judge in the court of delegates. He published several pieces, political and theological, among which were a Letter to the Clergymen of the two Universities, on the subject of the Trinity and Athanasian creed, and a treatise entitled the Rights of the Christian Church. This work excited a considerable sensation among the high church clergy, who attacked it with great animosity. Tindal published a defence, the second edition of which the house of commons ordered to be burned by the common hangman, in the same fire with Sacheverel's sermon, thus treating the disputants on each side in the same manner. In 1730, he published his Christianity as old as the Creation, or the Gospel a Republication of the Religion of Nature, in which his object was to show that there neither has been, nor can be, any revelation distinct from what he terms the internal revelation of the law of nature in the hearts of mankind. He died in 1733, leaving, in manuscript, a second volume of Christianity as old as the Creation, the publication of which was prevented by doctor Gibson, bishop of London. His nephew, Nicholas, born in 1687, fellow of Trinity college, Oxford, published a translation of Rapin's History of England, with a continuation. (See *Rapin*.)

Tindal, William, also named *Hitchins*, a martyr to the reformation, born in 1500, near the borders of Wales, was educated at Oxford, where he imbibed the doctrines of Luther. Bearing an excellent character for morals and diligence, he was admitted a canon of Wolsey's new college of Christ-church; but, his principles becoming known, he was subsequently ejected. He then withdrew to Cambridge, where he took a degree, and soon after went to reside as tutor in Gloucestershire. While in this capacity, he translated Erasmus's *Enchiridion Militis Christiani* into English; but, in consequence of his opinions, articles were preferred against him before the chancellor of the diocese, and he received a reprimand. He then accepted of a retreat in the house of an alderman of London, where he employed himself in preparing an English version of the New Testament. England not being a place where such a work could with safety be effected, he proceeded to Antwerp, where, with the assistance of John Fry, and one Roye, a friar, he completed his work, which was printed in that city, in 1526, 8vo., without a name. The greater part was sent to England, which produced great alarm among the church dignitaries; and the prelates Warham and Tunstall collected all they could seize or purchase, and committed them to the flames. The money received by the sale of the first edition in this way, enabled Tindal to print another edition, in conjunction with Miles Coverdale. He also translated the pentateuch, and subsequently Jonas, which formed the whole of his labors on the Scriptures, although others have been ascribed to him. He then returned to Antwerp, where he took up his residence with an English merchant. Henry VIII employed a wretch of the name of Phillips to betray Tindal to the emperor's procurator; and, in 1536, he was brought to trial upon the emperor's decree at Augsburg, where he was condemned to the stake, which sentence he quietly endured, being first strangled and then burnt. His last words were, "Lord, open the king of England's eyes!" Tindal's translation of the Scripture is highly esteemed for perspicuity and noble simplicity of idiom.

Tino (anciently *Tenos*); an island of the Grecian Archipelago, forming one of the group of the Cyclades, and consisting of a long, mountainous ridge, between Myconos and Andros, from which it is separated by a narrow channel. It contains 66 villages and 25,000 inhabitants, on 80 square miles. It is well cultivated by means of terraces, and produces abundance of silk, corn and fruit. Silk is the principal commodity. There are four monasteries on the island, and the church of the Evangelist, recently erected, has a miraculous image of the Virgin Mary, found there in 1823, which is much visited by pilgrims. Part of the revenues support a classical school established in 1825. The capital, St. Nicholas, on the western side of the island, was the residence of the European consuls, before the Greek revolution. Tenos, the ancient capital, one of the oldest cities of the Greeks, lay near a sacred forest, in which was a temple of Neptune.

Tintoretto; the surname of a Venetian historical painter, Giacomo Robusti, born at Venice, in 1512, died in 1594. His father was a dyer (in Italian, *tintore*), whence his surname. Tintoretto studied under Titian, who was so jealous of his powers that he dismissed him from his school. He therefore pursued his studies without any director, and endeavored to unite his master's coloring with the design of Michael Angelo—a union which is discernible in his best pieces. But he executed his works with so much haste that he remained far inferior to both of those great masters. His manner of painting was bold, with strong lights, opposed by deep shadows; his pencil was wonderfully firm and free; his disposition good; his execution easy, and his touch lively and full of spirit. He painted many works for his native city, among which are a Last Judgment, the Israelites worshipping the Golden Calf, St. Agnes, St. Roche, and a Crucifixion, the Marriage of Cana, the Martyrdom, or *Miracolo del Servo*, &c. His portrait, by himself, is in the Louvre; and there are many of his paintings in Germany, Spain, France, and England. Equal, in several respects, to Titian or Paul Veronese, he wants the dignity of the former, and the grace and richness of composition which distinguish the works of the latter. He had great variety in his attitudes, some of which are excellent, while others are contrasted to extravagance. Those of his women are generally graceful, and his heads are designed in a fine taste.

Tippicanoe; a river of Indiana, which joins the Wabash, about 420 miles from its mouth; length about 170 miles. It is rendered famous for a battle between the Americans and Indians, in November, 1811.

Tippoo Saib, sultan of Mysore, son of Hyder Ally, born in 1751, succeeded his father in 1782. (See *Hyder Ally*, and *Mysore*.) He continued the war in which his father was engaged with the English until the peace of Paris (1783), which deprived him of the assistance of the French; and the alliance of the Mahrattas (q. v.) with the British induced him to sign the treaty of Mangalore, in 1784, on advantageous terms. His kingdom had now a superficial extent of 97,500 square miles, with a revenue of about 14,000,000 dollars. The country was well peopled, and under good cultivation, and the people, although of Hindoo origin, contented with the Mohammedan government. But Tippoo soon showed himself fanatical and intolerant. He caused the Bramins to be cruelly beaten, or forcibly circumcised, when they would not consent to renounce their faith, and treated the Christians with such rigor, that more than 70,000 left his dominions. In 1787, he again attacked the Mahrattas, and, in 1789, turned his arms against the rajah of Travancore, an ally of the British. An offensive and defensive treaty was concluded (June, 1790) between the East India company, the Peishwa, and Nizam Ali. In the campaign of 1790, several places were reduced by the allies, and, in that of 1791, in which lord Cornwallis commanded in person, they besieged Tippoo in his capital, Seringapatam. (q. v.) A peace was concluded, February, 1792, by the terms of which the sultan of Mysore consented to relinquish nearly half of his territory, and to pay 30,000,000 rupees (nearly 15,000,000 dollars). The ceded territory was divided between the allies. But Tippoo was unwilling to submit to this loss, and endeavored, though without success, to engage some of the native powers in a war with the company. He also entered into negotiations with the French; and his intrigues were discovered to the English by the proclamation of the governor of the Isle of France, encouraging the inhabitants to enter his service. Suspecting that the preparations of Tippoo were connected with Bonaparte's invasion of Egypt, and receiving from him only evasive answers to their inquiries, the company determined to anticipate hostilities, and, on the 22d of February, 1799, in connexion with their former allies, they declared war against the sultan. The forces of the native allies being occupied by domestic troubles, the English were obliged to conduct the war alone. Two armies, under generals Stuart and Harris, entered Mysore, defeated Tippoo in two battles, and formed a junction before Seringapatam, whither he had retreated. The place was reduced by storm, May 4, and Tippoo perished in the assault. The whole of Mysore was now divided between the allies. The English annexed portions of the territory to the presidencies of Madras and Bombay, and erected another portion into a vassal kingdom under the young raja, or Kurtur Krishna, son of the last raja (who had died in prison in 1796), who was found in prison in Seringapatam. The children of Tippoo, with his wives and female relations, received the fort of Vellore, in the Carnatic, as a place of residence, with a yearly pension of 720,000 rupees from the English East India company.—Tippoo Saib was a man of bold and deep views, and evinced much prudence and sagacity in the execution of his projects. But, unfortunately for himself, he was surrounded with flatterers, and neglected his old officers and counsellors. His library, and his tiger, an automaton with which he was accustomed to amuse himself at table, are in the East India house, in London.

Tiptoft. (See *Worcester*, *Earl of*.)

Tiraboschi, Girolamo. This Italian scholar, born in 1731, at Bergamo, was distinguished for love of learning and unwearied application, even in early youth, when his father placed him, at eleven years of age, in the Jesuit college of Monza, where he enjoyed the instruction of learned teachers, and at the same time acquired such a fondness for the clerical profession, that he persuaded his father to let him, at fifteen years of age, commence his novitiate at Genoa. On its expiration, after the usual period of two years, he was directed to give instruction for five years in the lower schools in Milan, and afterwards in Novara. He was subsequently appointed to the professorship of rhetoric at Milan, in the university of Brera. In this situation he distinguished himself, not only as a teacher, but as an author. Several works of deep research and uncommon solidity obtained for him an offer of the place of librarian to Francis III of Modena. Tiraboschi made use of the valuable resources thus placed at his command, to compose his celebrated work *Storia della Letteratura Italiana*, which appeared successively in fourteen volumes. This work, which, in extent of learning, in accuracy, in completeness and in style, has not its equal in any literature, extends from the commencement of intellectual cultivation in Italy to the year 1700, and excites so much the more wonder at the quantity and value of its contents, as it was completed in the short space of ten years, during which the author also found time, as if for recreation, to produce various other works, which are highly distinguished in their kind; as the *Biblioteca Modenese*. He also wrote other works of a literary, historical and theological nature. He died at Modena, 1794, a sacrifice to his incessant application.

Tirade; a long, declamatory strain, generally of a violent nature. This term probably originated from the musical expression *tirata*, which formerly signified a series of notes of the same kind, rising and falling by degrees.

Tirailleurs; a name given, since the wars of the French revolution, to a species of infantry, intended to fight seldom in close order, but mostly dispersed, two and two always supporting each other, and in general to skirmish in front of the columns (q. v.) and troops of the line. The movements of the *tirailleurs*, nevertheless, are systematically ordered: they are directed by signals, generally given by bugles or small trumpets. The chief requisites of good *tirailleurs* are great activity, and a correct and keen eye, in order to accommodate themselves promptly to circumstances; to collect quickly into masses when so ordered, and disperse again with equal expedition; and to act constantly in unison with the whole army. They must be good marksmen, though they do not need the same degree of expertness as the sharp-shooters. The French introduced the system of *tirailleurs* in the wars of their revolution; having taken the idea, probably, from the practice of the people of North America, in the revolutionary war. (See *Infantry*.) As the French, when first attacked, could not oppose their enemies with troops equally well disciplined, they adopted the system of columns, preceded by *tirailleurs*. Long practice developed the rude beginnings, until *tirailleurs* have become indispensable in armies. They are of the greatest service both in attack and defence, and generally a great part of a battle at the present day consists of the skirmishes of *tirailleurs*, particularly when the enemy is to be kept distant from the columns, or, in general, to be checked, or where, from the nature of the ground, columns cannot act, as in the defence of woods, morasses, villages, gardens. It is evident that the use of *tirailleurs* has essentially changed tactics, as well as the system of war in general. Sometimes the *tirailleurs* form a separate company in each battalion, as was formerly the case with the French; sometimes the third line of the whole battalion consists of *tirailleurs* alone; but in case of necessity, every soldier has to act as such, as in the Prussian army.

Tiresias, in mythology; a celebrated prophet of Thebes, son of Everus and Chariclo. He lived nine generations of men. In his youth he found two serpents in the act of copulation, and, having struck them with a stick to separate them, he found himself suddenly changed into a girl. Seven years after, he found some serpents together in the same manner, and recovered his original sex by striking them with his wand. Jupiter and Juno, therefore, referred to his decision the question, which of the sexes received greater pleasure from the connubial state. Tiresias declared that the pleasure which the female received was ten times greater than that of the male. Juno, who supported a different opinion, punished Tiresias by depriving him of his eye-sight. Other accounts say that his blindness was inflicted on him because he had seen Minerva bathing. Chariclo complained of the severity with which her son was treated; and the goddess, who knew that his sight was irrevocable, alleviated the misfortunes of Tiresias by making him acquainted with futurity, and giving him a staff which could conduct his steps. He drew his prophecies from the flight or the language of birds, in which he was assisted by his daughter Manto, and sometimes evoked the manes from the infernal regions with mystical ceremonies. He was buried with great pomp by the Thebans, and honored as a god. His oracle at Orchomenus was in universal esteem. Homer represents Ulysses as going to the infernal regions to consult Tiresias concerning his return to Ithaca.

Tirlemont; a town of Belgium, South Brabant, called by the people of the country *Tienen;* nine miles south-east of Louvain; population, 7788. It was anciently one of the principal cities of Brabant. It has been a very flourishing and populous city, and many vestiges of its grandeur are yet visible; but it has suffered much by war and other calamities. In Nov., 1792, the Austrians were defeated here by the French; and, in April, 1793, the French were defeated by the Austrians, with the loss of 7000 men, and 33 pieces of cannon.

Tirol. (See *Tyrol.*)

Tironian Notes (*Notæ Tironianæ*). (See *Abbreviations.*)

Tisan, or **Ptisan** (from πτισσω, to decorticate, bruise, or pound); 1. barley deprived of its husks, pounded, and made into balls. 2. A drink is so called by the French, made mostly of farinaceous substances, as barley, rice, grits, and the like, boiled with water, and sweetened to the palate. This is prescribed by the French physicians in almost all complaints, being the common mode of putting a patient on a low diet, just as gruel is a common prescription of English and American physicians in like cases.

Tischbein; a German family, distinguished in the fine arts, of whom we shall mention only *John Henry*, born at Heyna, in Hesse, in 1722, died at Cassel, in 1789, and *John Henry William*, born at Heyna, in 1751. The latter was appointed, in 1790, director of the academy of painting at Naples, where he did much for the fine arts. The troubles towards the end of the last century caused him to return to Germany. He passed the rest of his life chiefly at Eutin. He painted many pictures of great beauty, and was fond of comparing the physiognomies of men with those of certain animals, to which he may have been led by his connexion with Lavater. He published *Têtes de différens Animaux dessinées d'après Nature pour donner une Idée plus exacte de leurs Caractères* (Naples, 1796, 2 vols., fol.): the moral disposition of each animal, if we may be allowed the expression, is given here with admirable truth: also Sir William Hamilton's Collection of Engravings from antique Vases, the greater Part of Grecian Fabric, found in ancient Tombs in the Two Sicilies, in the Years 1789 and 1790, with the Remarks of the Proprietor, published by W. Tischbein (Naples, 1790—1809, 4 vols., fol.), which contains 240 outlines of vases. The originals were lost in a shipwreck. He likewise published Homer, illustrated by Drawings from Antiques, by W. Tischbein, &c., with illustrations by Ch. Theophilus Heyne, 1—6 numbers (Göttingen, 1801—4), and 7—11 numbers (1821—23, Stuttg.), with illustrations by doctor T. Schorn. Homer occupied him almost throughout his life; he sought for every antique with which the poetry of Homer was in any way connected, and made a rich collection of drawings of antiques, given to the world in the above-mentioned work, the publication of which has been unfortunately interrupted.

Tisiphone; one of the Furies. (See *Furies.*)

Tissot, Simon Andrew, an eminent physician, born in the Pays de Vaud, in 1728, studied at Geneva and Montpellier, and settled at Lausanne. The success with which he treated the confluent small-pox, by means of fresh air and a cooling diet, at a period when stimulants and sudorifics were generally adopted, fixed on the young practitioner the public attention. He published a tract in favor of inoculation, in 1750, and *Avis au Peuple sur sa Santé* (1761, translated into English by doctor Kirkpatrick); *Avis aux Gens de Lettres et aux Personnes sédentaires sur leur Santé* (Paris, 1768); *Essai sur les Maladies des Gens du Monde* (Lyons, 1770, 12mo.); and *Tentamen de Morbis ex Manustupratione ortis.* Tissot refused advantageous offers made him by the kings of Poland and England, to induce him to quit Lausanne, but accepted of a professorship in the university of Pavia. This office, however, he relinquished after three years, and returned to Lausanne, where his death took place in 1797. The principal works of Tissot were published together at Paris, 1809 (8 vols., 8vo.), with the notes of professor Halle.

Tissot, Clement Joseph, a relative of the preceding, born in 1750, studied at Besançon. He published a treatise entitled *Gymnastique Médicale* (1781). He was appointed adjunct physician to the household of the duke of Orleans. After the revolution, he was surgeon-in-chief in various corps of the French armies, and served in the campaigns in Austria, Prussia, Poland and Italy. At length he retired from the service, and settled in professional practice at Paris, where he died in 1826. He published several essays and treatises, which are esteemed in foreign countries.

Titan; a son of Cœlus and Terra (q. v.). To him, as the eldest brother, belonged the empire; but, at the request of his mother and his sisters, Ceres and Ops, he ceded it to his youngest brother, Saturn, on condition that the latter should not let any of his sons live, so that the government would devolve on the sons of Titan. But when he learned that some children of Saturn had remained alive, he and his sons took up arms, conquered Saturn, and made him and his wife prisoners. But Jupiter, son of Saturn, who dwelt in Crete, made war upon his uncle with an army of Cretans, conquered him, and reinstated his father. This Titan is unknown to the early writers on mythology. The name of *Titans* is given to the sons of Cœlus and Terra, or Titæa (Earth), in general. Hesiod, and most of the mythological writers, make them six in number—Cœos, Crios, Hyperion, Japetus, Oceanus, Saturn. In a mythological fragment, Phorcys is added as the seventh. Later writers make them eighteen, reckoning, perhaps, in their number, some of the Cyclops and the Centimani, who were also sons of Cœlus. The children of the Titans, e. g. Atlas, are also called by this name. Helios, or Sol, son of the Titan Hyperion, is particularly denominated *Titan*. In general, the fable of the Titans is mixed with many notions borrowed from the Phœnician cosmogony, particularly this, that several of the Titans were the authors of various useful inventions, the first artists, architects, agriculturists, shepherds and hunters. The story that the eldest children of Cœlus dethroned their father, and waged war with Jupiter for the government, is one of the earliest mythological fictions. According to Hesiod (verse 176), they received this name because they stretched out their hands to their father (from τιταινω or ταινω). They are also called *Uranides*. Terra was indignant, it is said, at the cruelties of her husband, who did not allow the children, whom she brought forth, to see the light, but imprisoned them in Tartarus. She therefore excited the Titans to insurrection: Cœlus was imprisoned, and emasculated by Saturn, and the latter ascended the throne. But as he also imprisoned his brothers, the Cyclops and Centimani, in Tartarus, Terra excited Jupiter, and the other children of Saturn, to insurrection, and the war between the Titanides and the children of Saturn began. For ten years, the former fought from mount Othrys, the latter from mount Olympus, without any decisive result to either party, until Jupiter, in obedience to an oracle of Terra, loosed the Centimani (q. v.), by whose assistance the Titans were beaten, fettered, and thrown into Tartarus. The scene of the war is placed in Thessaly, on Olympus and Othrys, by Hesiod; on Olympus, Pelion and Ossa, by Homer. Among the earlier cosmogonical poets, this contest seems to be symbolical of the struggle of the elements at the formation of the world.

Titania. (See *Mab.*)

Titanium; a metal which has been obtained in a state of perfect purity only in sufficient quantity for the determination of its properties. It was in the condition of a powder as obtained, and possessed of the following properties: color dark copper-red; tarnishes in the air, and takes fire when heated; it detonates with nitre, and is acted upon with energy by all the dense acids. A crystallized metallic titanium, in small cubes, has been observed, occasionally, in the slags of great iron smelting furnaces; but it is always alloyed with iron, sufficiently to affect a delicate magnetic needle. These cubes have a copper-red color and much brilliancy. They are hard enough to scratch rock crystal, and have a specific gravity of 5.3. Neither of the strong acids are capable of dissolving them, nor are they fusible before the blow-pipe. There are two combinations of titanium and oxygen; the one is an oxide, the other an acid. The *oxide* of titanium is of a black, bluish, or purplish color, and may be formed by heating metallic titanium in fine powder along with caustic potash. It is also procured from titanic acid, by exposing it to a very violent heat in a charcoal crucible. It is insoluble in all the acids. When heated, it absorbs oxygen very slowly, and is converted into titanic acid by heating it with nitre, with great difficulty. Before the blow-pipe, it dissolves in bi-phosphate of soda, and forms a very dark-red glass. The anatase, an ore of titanium, described at the close of this article, appears to be wholly composed of this oxide. *Titanic acid* occurs native in the rutile. (See the close of the present article.) Its color is reddish-brown, and it has a specific gravity of 4.249. The native acid is, however, slightly impure, from the presence of iron: when the iron is separated, the acid presents a white color. It reddens litmus paper, after having been exposed to a high temperature. It resembles zirconia so closely as to be with difficulty distinguished from that earth. They may, however, be easily recognised from a blow-pipe experiment. Titanic acid, when fused with borax, or bi-phosphate of soda, in the exterior flame, gives a yellow or colorless glass, which in the interior flame becomes deep purple, or even brownish-black, if the acid be in excess. When titanic acid and zirconia occur together in the same mineral, we are unable to effect their separation: such minerals, in the present state of chemical knowledge, cannot be analyzed. Titanium unites with chlorine to form a *chloride*. It is formed by passing the gas over ignited titanic acid and charcoal in a porcelain tube. It is a fluid, perfectly transparent and colorless, heavier than water, and boils at 275° Fahr. When mingled with water, it is converted into muriatic acid and titanic acid. When titanic acid, fluor spar, and sulphuric acid, are mixed together in a leaden retort, a yellow-colored liquid is gradually obtained, which water immediately converts into fluoric acid and titanic acid. This is probably a *fluoride* of titanium. A *phosphuret* and a *sulphuret* of titanium have both been formed. Nothing is known respecting the combinations which titanium is capable of forming with selenium, tellurium, arsenic, antimony, chromium, molybdenum, tungsten, and columbium. Unsuccessful attempts have been made to combine it with silver, copper and lead. It has been combined with iron, and gave rise to an alloy of a gray color, interspersed with yellow-colored brilliant particles. It would appear that the affinity of titanium for other metals is, on the whole, very weak.

Ores of Titanium. These are five in number; viz. rutile, anatase, ilmenite, crichtonite and sphene. 1. *Rutile*, or titanite, occurs crystallized, in right square prisms,—the primary form of the species,—which are often terminated at one extremity by a four-sided pyramid, whose faces incline to the corresponding lateral ones under angles of 122° 45′. The lateral edges of the prism are often truncated, and the primary prismatic sides are liable to numerous vertical *striæ*. Macled forms, or twin crystals, are very common, whose appearance is that of a prism bent to an angle of 114° 30′; sometimes the geniculations are frequently repeated. The cleavage is parallel to the primary planes; lustre metallic adamantine; color reddish-brown, passing into red, sometimes yellowish; streak very pale brown; translucent to opaque; hardness about that of feldspar; specific gravity 4.24. It also occurs massive, the individuals being of various sizes and strongly connected. Alone before the blow-pipe, it is infusible, but gives, with borax, a yellowish glass, which assumes an amethyst color when further reduced. It consists of titanic acid. It occurs, generally, in imbedded crystals, either in quartz engaged in gneiss, mica-slate, or chlorite-slate; or in beds consisting of quartz, garnet and augite. It is likewise found in transparent crystals of quartz. Imbedded crystals in quartz have been found at Rosenau in Hungary, Teinach on the Bacher, in Stiria, and at various places along the Alps. Very perfect crystals occur in the Sanalpe in Carinthia, also at St. Gothard. Fine pebbles of rutile are found in Transylvania, and called *nigrine*, on account of their black color. At St. Yrieix, in France, and in the province of Guadalaxara, in Spain, twin crystals occur of very large dimensions. Other localities are Bohemia, Siberia and Brazil. In the U. States, very perfect crystals, and in great quantity, are found at Windsor, in Massachusetts, where they occur in seams of quartz traversing chlorite slate. Many other places might be mentioned in New England where rutile has been met with; but the above-mentioned is the only productive locality. 2. *Anatase*. This species is much more rare than that just described, but is exceedingly interesting from the beauty of its crystals, and from the nature of its composition, it being regarded as composed solely of the protoxide of the metal. Its crystals are small, and of the form of the octahedron, with a square base, the pyramids meeting under an angle of 136° 47′, which is the primary form of the species. The cleavage is parallel to the primary planes, and to the longer axis of the crystals; fracture conchoidal, though with difficulty observed; lustre metallic adamantine; color various shades of brown, more or less dark, also indigo-blue; streak white, semi-transparent; hardness nearly that of feldspar; specific gravity 3.82. It dissolves with difficulty in the salt of phosphorus, before the blow-pipe, and the portion not melted becomes white and semi-transparent. It occurs in narrow, irregular veins, accompanied by albite, quartz, mica, and axinite. Its chief localities are Bourg d'Oisans in Dauphiny, and in Switzerland; it is also found in Cornwall, in Norway, in Spain and Brazil. 3. *Ilmenite.* Axotomous iron ore (Mohs); menaccanite? iserine? The primary form of this species is believed to be a rhomboid of 85° 59′. It occurs massive, rarely crystallized in what are described by professor Kupfer as being variously modified four-sided prisms; color black; streak brownish; opaque; lustre on the fracture shining and resinous; fracture conchoidal; no visible cleavage; hardness between apatite and feldspar; specific gravity 4.6—4.8. It is unalterable before the blow-pipe, and consists of

Titanic acid, ...	46.67
Oxide of iron, ...	47.08
Oxide of manganese, ...	2.39
Magnesia, ...	0.60
Lime, ...	0.25
Oxide of chrome, ...	0.38
Silica, ...	2.80

It occurs in the Ilmen mountains of the Ural chain. The *menaccanite,* a substance found in small, black, angular grains, at Menaccan, in Cornwall, and at Botany Bay, as well as the *iserine,* found at Iser, in Silesia, and some other places, are believed to fall within the present species. 4. *Crichtonite* resembles very closely the ilmenite. It occurs in very small crystals, in the form of acute rhomboids, having the summits replaced, and being otherwise variously modified by secondary planes, the only cleavage being at right angles to the axis of the rhomboid. It is perfectly black, opaque, and of a shining lustre; fracture conchoidal. It is harder than fluor. Before the blow-pipe, it conducts much like ilmenite, but is believed to be a silicate of titanium. It occurs, along with anatase, on crystals of quartz, at Dauphiny. 5. *Sphene* (silico-calcareous oxide of titanium) occurs for the most part in well-defined crystals, which have the general figure of very flat octahedrons, but which are derived from an oblique rhombic prism of 133° 30′, parallel to which a distinct cleavage may be effected. Fracture imperfect conchoidal or uneven; lustre adamantine, sometimes inclining to resinous; color brown, yellow, gray and green; streak white; translucent on the edges; rarely transparent; hardness about that of apatite; specific gravity 3.46. Besides occurring in crystals, it is found massive, with a granular or lamellar composition. Before the blow-pipe, the yellow varieties do not change their color: all the rest become yellow. They intumesce a little, and melt on the edges into a dark-colored enamel. They are soluble in heated nitric acid, and leave a residue of silex. Sphene is composed of lime 32.20, oxide of titanium 33.30, and silex 28.00. It occurs in small nodules or crystals, imbedded in gneiss and beds of sienite. It is also found in white limestone, along with augite, scapolite, garnet and hornblende. It comes from several districts of the Sanalpe in Carinthia, where it is found in a coarse-grained gneiss. Other European localities are, near Dresden in Saxony, Arendal in Norway, St. Gothard, and Scotland. In the U. States it has been found in numerous places; but no where so abundantly as at Roger's rock, on the shore of lake George, where it occurs in gneiss with augite and hornblende. It is also found at Bolton in Massachusetts, in limestone, along with petalite, augite and scapolite, and at Amity, Orange county, New York.

Tithes, or **Tythes**; the tenth part of the increase yearly arising from the profits of lands, the stock upon lands, and the industry of the occupants, allotted to the clergy for their maintenance. The custom of giving and paying tithes is very ancient. In Gen. xiv. 20, Abraham gives Melchisedek the tenth of all the spoils taken from the four kings defeated by him. Tithes were first legally enjoined by Moses. They were not established by Christ. The Christian priests and the ministers of the altar lived at first upon the alms and oblations of the devout. For the first three hundred years after Christ, no mention is made in ecclesiastical history of any such thing as tithes. The first authority produced (setting aside the apostolical constitutions, which few of the advocates of tithes will insist on) is a provincial synod at Cullen, in 356, in which tithes are voted to be God's rent. After the church had enjoyed tithes without disturbance for two or three centuries, the laity, in the eighth century, obtained possession of part of the tithes, and appropriated them to their own uses. Some time afterwards they restored them, or applied them to the founding of monasteries or chapters. In 1179, the third council of Lateran commanded the laymen to restore to the church all the tithes which they yet held. Upon the first introduction of tithes, though every man was obliged to pay tithes in general, yet he might give them to what priests he pleased, which were called *arbitrary consecrations of tithes*; or he might pay them into the hands of the bishop, who distributed among his diocesan clergy the revenues of the church, which were then in common. But when dioceses were divided into parishes, the tithes of each parish were allotted to its own particular minister; first by common consent, or the appointments of lords of the manors, and afterwards by the written law of the land. However, arbitrary consecrations of tithes took place again afterwards, and became common in England till the time of king John. This was probably owing to the intrigues of the regular clergy, or monks of the Benedictine and other rules, and will account for the number and riches of the monasteries and religious houses which were founded in those days, and which were frequently endowed with tithes. But, in process of years, the income of the laborious parish-priests being scandalously reduced by these arbitrary consecrations of tithes, it was remedied in England by pope Innocent III, about the year 1200, in a decretal epistle, sent to the archbishop of Canterbury, which enjoined the payment of tithes to the parsons of the respective parishes, where every man dwelt, agreeably to what was afterwards directed by the same pope in other countries. This put an effectual stop to all the arbitrary consecrations of tithes, except some traces which still continue in those *portions of tithes*, which the parson of one parish has, though rarely, a right to claim in another; for it is now universally held that tithes are due, of common right, to the parson of the parish, unless there be a special exemption. This parson of the parish may be either the actual incumbent, or else the appropriator of the benefice; appropriations being a method of endowing monasteries, which seems to have been devised by the regular clergy, by way of substitution to arbitrary consecrations of tithes. (See the article *Impropriations.*) Mr. Smith observes (Nature and Causes of the Wealth of Nations, vol. iii), that tithes, as well as other similar taxes on the produce of the land, are, in reality, taxes upon the rent, and, under the appearance of equality, are very unequal taxes; a certain portion of the produce being, in different situations, equivalent to a very different portion of the rent. In some very rich lands, the produce is so great, that the one half of it is fully sufficient to replace to the farmer his capital employed in cultivation, together with the ordinary profits of farming-stock in the neighborhood. The other half, or, what comes to the same thing, the value of the other half, he could afford to pay as rent to the landlord, if there was no tithe. But, if a tenth of the produce is taken from him in the way of tithe, he must require an abatement of the fifth part of his rent, otherwise he cannot get back his capital with the ordinary profit. In this case, the rent of the landlord, instead of amounting to a half, or five tenths, of the whole produce, will amount only to four tenths of it. In poorer lands, on the contrary, the produce is sometimes so small, and the expense of cultivation so great, that it requires four fifths of the whole produce to replace to the farmer his capital, with the ordinary profit. In this case, though there was no tithe, the rent of the landlord could amount to no more than one fifth, or two tenths, of the whole produce. But if the farmer pays one tenth of the produce in the way of tithe, he must require an equal abatement of the rent of the landlord, which will thus be reduced to one tenth only of the whole produce. Upon the rent of rich lands, the tithe may sometimes be a tax of no more than one fifth part, or four shillings in the pound; whereas, upon that of poorer lands, it may sometimes be a tax of one half, or of ten shillings in the pound. It is a great discouragement to the improvement of land, that a tenth part of the clear produce, without any deduction for the advanced expense of raising that produce, should be alienated from the cultivator of the land to any other person whatever. The improvements of the landlord and the cultivation of the farmer are both checked by this unequal tax upon the rent. The one cannot venture to make the most important, which are generally the most expensive improvements, nor the other to raise the most valuable, which are generally the most expensive crops, when the church, which contributes no part of the expense, is to share so very largely in the profit. When, instead either of a certain portion of the produce of land, or of the price of a certain portion, a certain sum of money is to be paid in full compensation for all tax or tithe, the tax becomes, in this case, exactly of the same nature with the land tax of England. It neither rises nor falls with the rent of the land. It neither encourages nor discourages improvement. The tithe, in the greater part of those parishes which pay what is called a *modus*, in lieu of all other tithes, is a tax of this kind. It is well known, and has often been lamented, even by the clergy themselves, that this method of raising a revenue for their subsistence, is a continual source of dispute between the clergy and their parishioners, and contributes to obstruct the usefulness of their ministry. In Holland, and some other Protestant countries, the civil magistrates have adopted what some would have thought a better plan, by allowing their ministers a fixed stipend, paid out of the public funds. The custom of paying tithes, or of offering a tenth of what a man enjoys, has not only been practised under the old and the new law, but we also find something like it among the heathens. Xenophon, in the fifth book of the expedition of Cyrus, gives us an inscription upon a column, near the temple of Diana, by which the people were warned to offer the tenth part of their revenues every year to that goddess. The Babylonians and Egyptians gave their kings a tenth of their revenues. (See Aristotle, in his *Œconomics*, lib. ii., Diodorus Siculus, lib. v., and Strabo, lib. xv.) Afterwards the Romans exacted of the Sicilians a tenth of the corn they reaped; and Appian tells us, that those who broke up, or tilled, any new grounds, were obliged to carry a tenth of their produce to the treasury. The Romans offered a tenth of all they took from their enemies to the gods; whence the name of *Jupiter Prædator:* the Gauls, in like manner, gave a tenth to their god Mars, as we learn in the Commentaries of Cæsar. Authors have been perplexed to find the origin of a custom established among so many people of different manners and religions, to give a tenth to their kings, their gods, or their ministers of religion. Grotius takes it to arise hence, that the number ten is the most known, and the most common, among all nations, by reason of the number of fingers, which is ten. On this account, he thinks the commandments of God were reduced to ten, for people to retain them with greater ease; and the philosophers established ten categories, &c.

Titian, or **Tiziano Vercelli**, one of the most distinguished of the great Italian painters, was born at Capo del Cadore, in the Alps of Friuli, in 1480. His early indication of talent for the arts of design induced his parents to place him under Sebastiano Zuccati of Trevigi, and subsequently under Giovanni Bellini of Venice. He soon made an extraordinary proficiency, and attained so exact an imitation of his master's style, that their works could scarcely be distinguished. This style, however, was stiff and dry, so that when the young artist had seen the performances of Giorgione, which were of a more free and elegant character, he quitted his former master, and soon, by his facility, excited envy in his new one. At the same time, he by no means neglected other branches of study, but made so great a progress under proper instructers, that at the age of twenty-three he was celebrated as one of the most promising poets of the day. With great judgment, however, he devoted himself to the pursuit for which he felt the most decided predilection, and attained to great perfection in landscape, portrait, and history. He was particularly remarkable for his accurate observation and faithful imitation of nature, as regards the tones and shades of coloring: his taste in design was less conspicuous; and it is in portraits and landscapes that he is deemed unrivalled. Indeed, in the opinion of Mr. Fuseli, he is to be regarded as the father of portrait painting, as relates to resemblance, character, grace, and tasteful costume. His principal residence was at Venice, though he occasionally accepted invitations from princes to their courts. At Ferrara, he executed the portraits of the duke and duchess, also that of Ariosto, then a resident there. He was sent for to Rome by cardinal Farnese, and attended Charles V at Bologna, who was so pleased with the portrait which he made of him, that he conferred on him the order of knighthood, and granted him a pension, which was afterwards augmented by Philip II. Most of the princes and leading men of the day were ambitious of being painted by him, so that his pictures are doubly valuable as portraits of eminent individuals and for beauty of execution. He resided some time both in Spain and Germany; but his home was Venice, where he lived in great splendor, and maintained the rank due to his genius. He retained the spirit and vigor of youth to the advanced age of ninety-six, and then died of the plague, in 1576. This great painter had his weaknesses, the chief of which was an extreme jealousy of rival excellence, which rendered him ungenerous to Tintoretto, and even to a brother of his own. He is the first of all colorists, but less eminent in other respects. In general, his male forms are less elastic than muscular, while his females partake too much of the fair, dimpled, soft, Venetian figures, which are too full for elegance. He left two sons, one of whom obtained preferment in the church; the other became a distinguished painter, but being addicted to alchemy, wasted his patrimony and neglected his art. Of the historical pictures of Titian, two are peculiarly excellent, a Last Supper in the Escurial, and Christ crowned with Thorns in a church at Milan. The engravings from his pictures, including landscapes and pieces, cut in wood, amount to more than six hundred.

Titicaca; a lake in Bolivia, 240 miles in circuit, and 400 feet in depth. The water, though neither salt nor brackish, is muddy, and nauseous to the taste. It contains several islands; one was anciently a mountain, levelled by order of the incas. It gave to the lake its own name of *Titicaca*, which, in the Indian language, signifies a mountain of lead. Lon. 69° 56′ W.; lat. 16° 10′ S.

Title; one of the various significations of this word is a term by which the rank or office of an individual is denoted. In the articles *Counsellor*, *Majesty*, and *Ceremonial*, the extreme to which the Germans have gone in attaching titles to every office, and even extending the same to the wife of the officer, is treated, and several curious examples are given. In England and the U. States, no title is given to civil officers, except as a matter of courtesy or of convenience, to distinguish between individuals of the same name. In some parts of the U. States, some such means of distinction are required by the commonness of particular names, many more individuals being to be found with the same surname, than, usually, in European countries. But the cases in which an individual, holding a civil office, are addressed by an official designation, are very few. With military titles, however, the case is different. Having little of the reality of military distinction, we seem disposed to make the most of the semblance, and generals, colonels, and captains, swarm throughout the land. Every traveller has his fling at the military dignitaries whom he meets behind the bar of a tavern, or on the box of a stage-coach. In some places, it is even an ordinary vulgarism to give the title of captain to strangers. There are also certain terms of courtesy used in the superscription of letters, the principal of which (to say nothing of the chivalric term of *esquire*) are the *reverend*, addressed to clergymen, and the *honorable*, to judges, members of congress, and the higher branch of the state legislatures. These will, probably, before long, share the fate of other anti-republican distinctions. The governor and lieutenant-governor of Massachusetts are the only public functionaries in this country who are provided by law with titles of honor, the constitution of that state having given to the former the title of *his excellency*, to the latter that of *his honor*. The Germans, having so enormous a mass of titles, have divided them into titles of rank (*Standestitel*), e. g. those of princes, nobles, &c., by which they are distinguished from commoners; titles of honor, as *excellency*, *grace*, *highness*; and titles of office, as *professor*, *counsellor*, *superintendent*. The holders of this latter class of titles are subdivided into *real* (as real counsellor, &c.), when actually possessed of the office denoted, and *titular*, when they have merely the title of an office, as, for example, so many counsellors of legation, court-counsellors, &c. Almost all monarchs assume titles taken from countries over which they have no sway. In some cases, this originates from a real or supposed claim of the crown upon the country in question; in some, the sovereignty asserted may be actually exercised, under certain circumstances, e. g. the king of Prussia calls himself duke of Mecklenburg, because, under certain circumstances, the government of that country would devolve upon him. In some cases, it is a mere pompous form; for instance, the emperor of Austria calls himself king of Jerusalem, and the king of Portugal king of the navigation, conquest and commerce of Æthiopia, Arabia and India. Generally, monarchs have a less and a great or full title, just as they have two coats of arms. That epithet which is added to the word *majesty*, in the case of the different sovereigns of Europe, is generally called the *predicate*. These epithets are, *Most Christian* (q. v.), for France; *Catholic* (q. v.), for Spain; *Most Faithful*, for Portugal; *Apostolic* (q. v.), for Hungary. 2. *Title* signifies the right of a person to some particular thing. 3. The heads of the various chapters in the *corpus juris* (q. v.), and other law books, &c., are called *titles*.

Titmouse (*parus*). The birds of this genus are of small size, but robust and muscular. The beak is thick at the base, short and stout; the feet strong, especially the hinder toe. The head is remarkable for the solidity and thickness of the bones of the skull. They eat all kinds of food, but more particularly insects and worms, in search of which they fly perpetually from branch to branch, examining every crevice, and clinging in every variety of posture, often with the head downwards. They do not spare young or weaker birds, when sick, or entangled in snares, but pierce the cranium by blows with the beak, for the purpose of feeding on the brain; neither do they hesitate to attack birds much stronger than themselves. Notwithstanding their pugnacious disposition, they live in small scattered flocks. Most of them build in hollow trees, and are remarkable for their fecundity among birds of their size, some laying eighteen or twenty eggs. We have only two species in the U. States. The black-capt titmouse, or chick-a-dee, is the most familiar. The crested titmouse is larger and more uniform in its colors.

Titus, a disciple of St. Paul, who addressed to him a letter, was born of pagan parents, but, after his conversion, became the faithful companion of the apostle. He was employed by St. Paul on several missions, and sent to Crete to organize and govern the church in that island, where he died at an advanced age.

Titus Vespasianus, a Roman emperor, born A. D. 40, was the eldest son of the emperor Vespasian. He was educated at the court of Nero, with Britannicus (q. v.), and was the intimate friend of that unhappy prince. Titus first served as a tribune in Germany and Britain, and won general favor and esteem by his courtesy of manners, his courage, and his military genius. After his return to Rome, he occupied himself with the practice of law, and managed several cases with much skill. While yet quite young, he married the daughter of a Roman knight, and, on her death, united himself in a second marriage with a noble Roman lady, whom he repudiated, after she had borne him a daughter. He then served as questor with reputation, and, on the expiration of his term of office, accompanied his father in the war against the Jews as commander of a legion. When Galba ascended the throne, Titus was sent by his father to declare his adhesion to the new emperor, but, on the way, received the news of his assassination. On the death of Otho, Vespasian determined to possess himself of the throne; and Titus was left to conduct the war in Judea. He took Jerusalem (A. D. 70), after a siege, during which it had been the scene of the most shocking sufferings and cruelties. The temple was destroyed in spite of his exertions to save it. In some respects, Titus displayed much humanity; but it is impossible to justify the crucifixion, by his orders, of hundreds of the captives. After paying a visit to Egypt, he returned to Rome, which he entered in triumph, and was associated by his father in the government of the empire. His conduct thus far, if we may believe the accounts of Suetonius, had been marked by the most shameless excesses. He had chosen his associates among the most abandoned of the youthful courtiers, and indulged in the gratification of every impure desire and unnatural vice. From one so little accustomed to restrain his passions, the Roman people anticipated nothing but the misrule of a second Caligula or Nero; but, on ascending the throne (79), Titus disappointed these gloomy prognostications, and, relinquishing his vicious habits and debauched companions, became the father of his people, the guardian of virtue, and the patron of liberty. His reformation appeared to be sincere and perfect: the unworthy and dissolute youth assumed the character of the enlightened and munificent sovereign of a vast empire. All informers were banished from his court, and even severely punished; a reform took place in judicial proceedings; and the public edifices were repaired, and new ones erected for the convenience of the people. The memorable exclamation of Titus, "*Perdidi diem*" (I have lost a day), which he is said to have uttered one day when no opportunity had occurred for doing any service or granting a favor to any one of his subjects, has been considered as strikingly characteristic of his sentiments and behavior, which procured for him the title of *Amor et deliciæ generis humani* (the delight of mankind). Two senators having engaged in a conspiracy against his life, he not only pardoned them, but also admitted them to his friendship. During his reign, there was a conflagration at Rome, which lasted three days; the towns of Campania were desolated by an eruption of Vesuvius (see *Herculaneum*); and the empire was visited by a destroying pestilence. In this season of public calamity, the emperor's benevolence and philanthropy were most conspicuously displayed. He comforted the afflicted, relieved the sufferers by his bounty, and exerted all his care for the restoration of public prosperity. The Romans did not long enjoy the benefits of his wise and virtuous administration. He was seized with a violent fever, and, retiring to a country house which had belonged to his father, he there expired, lamenting with his latest breath the severity of his fate, which removed him from the world before he had perfected his plans for the benefit of his grateful subjects, whose sorrow for his loss was heightened by their apprehensions arising from the gloomy and unpromising character of his brother Domitian (q. v.), who was even suspected of having hastened the catastrophe which was to contribute to his own elevation to imperial power. Titus died A. D. 81, in the forty-first year of his age, after reigning two years.

Tityos. (See *Tartarus.*)

Tiverton; a borough of Devonshire, England, with the remains of a castle, the site of which covered nearly an acre. The church of St. Peter, a handsome structure, is the work of different ages. The north side was built about 1073. The south side, ornamented with much curious sculpture, was erected about 1520. The tower is 116 feet in height. A free grammar school was founded here about 1599, attached to which are two fellowships and two scholarships, at Cambridge, and the same at Oxford. Tiverton returns two members to parliament. It was formerly famous for its woollen manufactures, and is now well known for an extensive manufacture of lace, in which more than 2000 persons are employed. Population, 9766. Fourteen miles north of Exeter.

Tivoli, on the Teverone, remarkable for its classical associations and beautiful situation, is the capital of a district in the Campagna di Roma; population, 5500; eighteen miles north-east of Rome. The Teverone (anciently *Anio*) here precipitates itself nearly 100 feet in one mass, and then rushes through a chasm of the rock into a cavern below. (See *Terni.*) Here are some beautiful ruins in the vicinity, the remains of the ancient Tibur. Near the town is also the Solfatara, or Lago di Bagni. (See *Campagna di Roma.*)

Tiziano. (See *Titian.*)

Tlascala; at the time of the conquest of Mexico by the Spaniards, an independent state at war with the Mexicans, but afterwards included in the intendancy of Puebla de los Angeles, in the viceroyalty of New Spain. (See *Mexico*, and *Puebla*.) It now forms a territory of the Mexican republic, the population (about 60,000) not being sufficient to constitute it an independent state. The principal town, Tlascala (64 miles east of Mexico; lon. 98° 10′ W.; lat. 19° 25′ N.), situated on a river running into the Pacific, is said to have contained 300,000 inhabitants when the Spaniards arrived here. At present, the population does not exceed 3000.

Toad (*bufo*). The toads are hardly distinguishable from the frogs, except by their more clumsy form and motions, and the warts with which the skin is studded. The jaws, however, are destitute of teeth, and their habits are more terrestrial; for they keep at a distance from the water during the greater part of the year. They come out of their holes chiefly during the night, and feed on snails, worms and insects. They are capable of living a long time without food, and have been known to remain whole years in walls, hollow trees, in the earth, or even when artificially enclosed in plaster.* In the spring, they resort to the water for the purpose of depositing their eggs. The tadpoles are born there, acquire gills, and in every respect resemble those of frogs. The common toad of Europe has been an object of disgust, and even horror, in all ages; and numerous fables have been related concerning it. It has been accused of being poisonous, but most certainly is guilty of no other crime than that of ugliness. Notwithstanding the popular prejudice, it has been ascertained that the legs are sold extensively in the markets of Paris for those of frogs.—The common toad of North America (*B. musicus*) seldom crawls like the European species, but moves by a succession of short leaps. It is found in all parts of the U. States. Early in the spring, these assemble in great numbers in ponds, and utter a long-continued, thrilling note, familiar to the ears of most of us.—The *tree-toads* (*hyla*) belong to a different genus, distinguished by having a mucous tubercle at the extremity of each toe, by means of which, acting as a sucker, they are enabled to cling to the branches of trees, or to a perpendicular wall. There are several species in the U. States.

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* This, at least, is the common opinion; but the celebrated geologist, professor Buckland, in a paper published in the Edinburgh Philosophical Journal for July, 1832, says, in reference to a number of experiments which he made on the vitality of toads enclosed in wood and stone: "From the result, it seems to follow that toads cannot live a year excluded totally from atmospheric air, and that they cannot survive two years entirely excluded from food; and there is a want of sufficiently minute and accurate observation in those so frequently recorded cases, where toads are said to be found alive within blocks of stone and wood, in cavities that had no communication whatever with the external air. The first effort of the young toad, as soon as it has left its tadpole state and emerged from the water, is to seek shelter in holes and crevices of rocks and trees. An individual which, when young, may have thus entered a cavity by some very narrow aperture, would find abundance of food by catching insects, which, like itself, seek shelter within such cavities, and may soon have increased so much in bulk as to render it impossible to go out again through the narrow aperture at which it entered. A small hole of this kind is very likely to be overlooked by common workmen, who are the only people whose operations on stone and wood disclose cavities in the interior of such substances. In the case of toads, snakes and lizards, that occasionally issue from stones that are broken in a quarry, or in sinking wells, and sometimes even from strata of coal at the bottom of a coal mine, the evidence is never perfect, to show that the reptiles were entirely enclosed in a solid rock: no examination is ever made, until the reptile is first discovered by the breaking of the mass in which it was contained, and then it is too late to ascertain, without carefully replacing every fragment (and in no case, that I have seen reported, has this ever been done), whether or

Toad-Flax (*antirrhinum linaria*). This plant is naturalized, and a troublesome weed, in many parts of the U. States. In its general habit, it is not very unlike the flax; but the flowers are bright yellow, showy, and of a singular form, the corolla labiate, and provided with a long spur. In the ordinary state of the plant, the lips of the corolla are closed, and, if forcibly opened, somewhat resemble the mouth of some animal; hence the name of *snap-dragon* has been applied to plants of this genus. It grows in sandy soil. A singular deviation from the ordinary structure of the flower sometimes takes place in this plant, and has led to some discoveries in vegetable physiology: the corolla then assumes a regular form, and is provided with five radiating spurs, instead of one.

Toaldo, Giuseppe, a celebrated Italian mathematician, astronomer and meteorologist, born in 1719, near Vicenza, studied theology at Padua, but occupied himself chiefly with the mathematical sciences, and, in 1762, was made professor of astronomy and meteorology in the university of Padua. Through his influence, an observatory was built there, and lightning rods were erected in various places. His mathematical text-books are distinguished for clearness and precision, and have been introduced into many schools in Italy. His Astronomical and Meteorological Journal was continued from 1773 till his death, and his essay On the Influence of the Weather upon the Growth of Plants, which gained the prize proposed by the scientific society of Montpellier (1774), is a standard work. He published several other esteemed works, and died in 1797.

Tobacco (*Nicotiana tabacum*). The introduction of the use of tobacco forms a singular chapter in the history of mankind; and it may well excite astonishment, that the discovery in America of a nauseous and poisonous weed, of an acrid taste and disagreeable odor, in short, whose only properties are deleterious, should have had so great an influence on the social condition of all nations; that it should have become an article of most extensive commerce; and that its culture should have spread more rapidly than that of the most useful plants. At the time of the discovery of America, tobacco was in frequent use among the Indians, and the practice of smoking was common to almost all the tribes; and they pretended to cure a great variety of diseases by this plant. Its introduction into the eastern continent was every where marked with ridicule and persecution. The book written against it by James I is well known; but a hundred others of the same character were published in various languages. Pope Urban VIII excommunicated those who took tobacco in churches; the empress Elizabeth also prohibited its use in churches. In Transylvania, an ordinance was published, in 1689, threatening those who should plant tobacco with the confiscation of their estates. The grand-duke of Moscow and the king of Persia forbade its use under the penalty of the loss of the nose, and even of death. At present, the aspect of affairs is so much changed, that all the sovereigns of Europe, and most

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not there was any hole or crevice by which the animal may have entered the cavity from which it was extracted. Without previous examination, it is almost impossible to prove that there was no such communication. In the case of rocks near the surface of the earth, and in stone quarries, reptiles find ready admission to holes and fissures. We have a notorious example of this kind in the lizard found in a chalk-pit, and brought alive to the late doctor Clarke. In the case, also, of wells and coal-pits, a reptile that had fallen down the well or shaft, and survived its fall, would seek its natural retreat in the first hole or crevice it could find; and the miner, dislodging it from this cavity, to which his previous attention had not been called, might, in ignorance, conclude that the animal was coeval with the stone from which he had extracted it."

of those of other parts of the world, derive a considerable part of their revenue from tobacco. The plant is glutinous, and covered with a very short down; the stem upright, four or five feet high, and branching; the leaves are alternate, sessile, oval-oblong, and entire on the margin; the superior ones lanceolate; the flowers are disposed in a terminal panicle; the tube of the corolla long, inflated towards the summit, and dividing into five acute, angular, spreading lobes, of a rose color. It was originally a native of South America.—Another species (*N. rustica*) is very common, but is less esteemed, and is distinguished by the short, yellowish-green corolla.—*N. quadrivalvis* is cultivated by the Indians of Missouri, and furnishes tobacco of excellent quality.—The best Havana cigars are made from the leaves of *N. repanda.*—Other species of tobacco are found in Mexico and South America. One has been discovered in China, and another in New Holland. This genus belongs to the natural family *solaneæ.* This popular narcotic is probably in more extensive use than any other, and its only rival is the betel of the East. According to Linnæus, it was known in Europe from 1560, when seeds of it were sent from Portugal to Catharine de' Medici by Nicot (q. v.), the French ambassador in that country, from whom it received its botanical name. The common notion, that the specific appellation *tobacco* was derived from its having been imported from Tobago, is now universally admitted to be without foundation. Humboldt (*Essai sur la Nouvelle Espagne*, second edition, iii, 50) has shown that *tobacco* was the term used in the Haytian language to designate the pipe or instrument employed by the natives in smoking the herb; which term, having been transferred, by the Spaniards, from the pipe to the herb itself, has been adopted by other nations. Tobacco is believed to have been first introduced into England by the settlers, who returned, in 1586, from the colony which it had been attempted to found in Virginia under the auspices of Raleigh. Harriot says that the English, during the time they were in Virginia, and after their return home, were accustomed to smoke it after the manner of the natives (Hakluyt, i, 75). Raleigh, and other young men of fashion, adopted and introduced the practice into England; and it rapidly spread among the English, as it had previously done among the Portuguese, Spaniards and French. During the reign of George III, the practice of smoking, which had previously been exceedingly prevalent, went out of fashion, and was nearly superseded, among the higher and middle classes, by that of snuff-taking. Latterly, however, smoking has been revived in that country. The practice of smoking has become so general, especially in Holland and Germany, that it constitutes a daily luxury with nearly all the peasantry of those countries, as well as with the more indolent and wealthy classes of inhabitants. Tobacco is a powerful narcotic, and also a strong stimulant, and, taken internally, even in small doses, it proves powerfully emetic and purgative. The oil is celebrated for its extreme virulence, and, when applied to a wound, is said, by Redi, to be as fatal as the poison of a viper. The decoction, powder and smoke, are used in agriculture to destroy insects. As tobacco is cultivated for the leaves, it is an object to render these as large and as numerous as possible, and new, fresh and fertile soil is preferred. It is very sensible to frost. The plants are raised on beds, early in spring, and when they have acquired four leaves, they are planted in the fields, in well prepared earth, about three feet distant every way. Every morning and evening, the plants require to be looked over, in order to destroy a worm which sometimes invades the bud. When four or five inches high, they are moulded up. As soon as they have eight or nine leaves, and are ready to put forth a stalk, the top is nipped off, in order to make the leaves larger and thicker. After this, the buds, which sprout from the axils of the leaves, are all plucked; and not a day is suffered to pass without examining the leaves, to destroy a large caterpillar which is sometimes very destructive to them. When they are fit for cutting, which is known by the brittleness of the leaves, they are cut, with a knife, close to the ground; and, after lying some time, are carried to the drying shed, where the plants are hung up by pairs, upon lines, having a space between, that they may not touch one another. In this state they remain, to sweat and dry. When perfectly dry, the leaves are stripped from the stalks, and made into small bundles, tied with one of the leaves. These bundles are laid in heaps, and covered with blankets. Care is taken not to overheat them; for which reason, the heaps are laid open to the air from time to time, and spread abroad. This operation is repeated till no more heat is perceived in the heaps, and the tobacco is then stowed in casks for exportation In the manufacture of tobacco, the leaves are first cleansed of any earth, dirt, or decayed parts; next, they are gently moistened with salt and water, or water in which salt, along with other ingredients, has been dissolved, according to the taste of the fabricator. This liquor is called *tobacco sauce*. The next operation is to remove the midrib of the leaf; then the leaves are mixed together, in order to render the quality of whatever may be the final application, equal; next, they are cut into pieces, with a fixed knife, and crisped or curled before a fire. The succeeding operation is to spin them into cords, or twist them into rolls, by winding them, with a kind of mill, round a stick. These operations are performed by the grower. Afterwards, tobacconists cut it into chaff-like shreds for smoking, by a machine like a straw-cutter, form it into small cords for chewing, or dry and grind it for snuff. In manufacturing snuff, various matters are added for giving it an agreeable scent; and hence the numerous varieties of snuffs. The three principal sorts are called Rappees, Scotch, or Spanish, and Thirds. The first is only granulated; the second is reduced to a very fine powder; and the third is the siftings of the second sort. Tobacco is extensively cultivated in France and other European countries, in the Levant, and India; but the tobacco of the U. States is considered decidedly superior to most others, being much more highly flavored than that of Europe. Of 22,400,000 pounds of unmanufactured tobacco imported into England in 1829, 21,751,600 pounds were from the U. States. The yearly value of the tobacco exported from this country amounts to about 5,000,000 dollars. The tobacco of Cuba is preferred for smoking.

Tobago; one of the Caribbee islands, in the West Indies, belonging to Great Britain, about thirty miles in length, from south-east to north-west, and about nine in breadth; lon. 60° 30′ W.; lat. 11° 16′ N.; population, 322 whites, 1164 free people of color, and 12,556 slaves. The climate of Tobago is temperate, the heat being allayed by the sea breezes; and it lies out of the track of those hurricanes that prove so fatal to the other West India islands. The surface is unequal and agreeably diversified; and its north-west extremity is mountainous. Its soil is of different kinds, but, in general, the mould is rich and black, and produces whatever is raised in other parts of the West Indies. The abundance of springs upon the island contributes to its healthfulness, and its bays and creeks are very commodious for shipping.

Tobit. The book of Tobit, though rejected as apocryphal by the Jews and Protestants, is received into the canon by the Roman Catholics. It contains an account of some remarkable events in the life of Tobit or Tobias, a Jew of the tribe of Nephthali, and his son, of the same name. Jahn thinks it was written in Greek, about 200 or 150 B. C. Tobit, though carried away captive, and afflicted with the loss of sight, retained his trust in God, and distinguished himself by his active benevolence towards his countrymen. Having become poor, he determined to send his son Tobias to Media to collect a debt there due him, and the angel Raphael, who was commissioned by God for that purpose, served him as a guide. On arriving at the river Tigris, the young Tobias was attacked, while bathing, by a large fish, which, by the direction of Raphael, he killed, preserving the heart, liver and gall. Reaching Ecbatana, they found there a relation of Tobit, whose beautiful daughter, Sara, had been married seven times. But her seven husbands had all been killed, before consummating the marriage, by a devil, who loved the maid. By command of the angel, Tobias married her, and, on going into her chamber, burned the heart and liver of the fish upon the ashes of the perfume; and when the evil spirit smelt the smoke, he fled into the utmost parts of Egypt, and the angel bound him. Tobias now returned to his father with the money and his bride, and restored his sight by anointing his eyes with the gall of the fish. Tobit died at Nineveh, at the age of ninety-nine years, and his son Tobias retired to Ecbatana, where he lived to rejoice over the fall of Nineveh.

Tobolsk; a government of Asiatic Russia, comprising the western part of Siberia, bounded north by the Frozen ocean, east by Tomsk, south by Orenburg, and west by Perm and Archangel; square miles, 356,000; population, 600,000. It is watered by the Oby and its branches, the Irtisch, Tobol, &c. (See *Siberia*.) The capital, of the same name, the chief city of Siberia, is on the Irtisch, at the junction of the Tobol; 1000 miles east by north of Moscow; lon. 68° 16′ E.; lat. 58° 12′ N. It consists of two parts, upper and lower towns. The upper town has an elevated situation, and forms what is properly called the city. It contains the residence of the governor, the tribunals, public offices, and the magazine of foreign merchandise. The lower town is subject to inundation: it is entirely built of wood, with the exception of a convent. Tobolsk contains one Lutheran and thirteen Greek churches, and two convents. Connected with the lower town is a suburb inhabited by Tartars, who are a quiet and industrious race. The other residents are in a great measure descendants of exiles sent here for their crimes, or for offences against the Russian government, or sometimes on the mere caprice of despotism. The largest colony ever transported hither consisted of Swedish officers, made prisoners at the battle of Pultava, in 1709, many of whom were well-educated men. Tobolsk is a great thoroughfare for the trade of Siberia; and hither are brought all the furs collected as tribute to the government. Tobolsk is an archiepiscopal see, and has a theatre and a theological seminary. Population, 25,000. There is much difference in the climate and soil of the government of Tobolsk. The northern half is extremely cold, and unfit for cultivation, and even the heat of summer is soon interrupted by the icy winds from the sea. The wealth of this region consists of furs, fish and game. The reindeer is the most important domestic animal. The southern and western parts are more mild, although the winters are severe, and have a fruitful soil, yielding corn and flax in abundance, and furnishing rich pastures for large flocks of sheep, and herds of cattle and horses. Besides Russians, there are numerous Tartar tribes, with Samoiedes, Ostiacs, &c. among the inhabitants.

Tocat, or **Tokat**; a city of Asiatic Turkey, in the pachalic of Sivas, anciently a city of Pontus, called *Berisa;* lon. 36° 30′ E.; lat. 39° 35′ N.; population, 100,000, chiefly Turks. It is almost surrounded with mountains, which afford quarries of marble, and is well supplied with water from innumerable springs. It is the residence of a cadi, a waywode, and an aga. The Armenians have seven churches, the Greeks one. Tocat may be considered as the centre of an extensive inland trade from all parts of Asia Minor. The caravans from Diarbekir arrive in eighteen days, from Sinob in six, from Bursa in twenty, from Smyrna in twenty-seven, and proportionally less on horseback or on mules.

Toga (from *tegere*, to cover); the garment of wool, which, in time of peace, Roman citizens wore in public. Latterly, it was worn almost exclusively by the male sex. Under the emperors, the toga went out of fashion. As only freeborn citizens were permitted to wear the toga, it was an honorary garment, and at the same time distinguished the Romans from other nations; hence *gens togata* is used for Roman people. As the toga was worn only in peace (the warrior wore the *sagum*), the word *toga* is sometimes used as a metaphor for peace, or peaceful citizens. The toga was thrown over the left shoulder, and passed under the right arm, which thus remained entirely free. From the breast downwards it was sewed together, and, as the Romans had no pockets, the hollow called *sinus*, in front of the breast, was used to put small articles in. The variety in the color, the fineness of the wool, and the ornaments attached to it, indicated the rank of the citizen. Generally it was white (*toga alba*). Rich persons wore wide *togæ*, the poor narrow ones. Candidates for office wore a pure white toga. (See *Candidate.*) The mourning toga was black. Persons prosecuted at law wore dirty, or old, or gray, or, in general, unsightly *toga* (*togæ sordidæ*). If it was ornamented with a purple stripe, it was called *toga prætexta.* Such was worn by all superior magistrates and priests. This ornamented toga was also worn by boys and girls, the former till their seventeenth, the latter till their fourteenth year, after which the former changed it for the *toga virilis*, i. e. the common simple white toga, which was also called *pura* and *libera.* (See also *Stola.*) The *triumphatores* wore a toga adorned with gold and purple (*toga picta*, also *palmata*). Ald. Manutius has written on the toga, and Seckendorf has lately treated of its essential form.

Togrul Beg. (See *Caliph*, vol. ii, p. 412.)

Toise. (See *France*, vol. v, p. 205.)

Tokay; a town of Hungary, in the county of Semplin, at the conflux of the rivers Theis and Bodrog; lon. 20° 57′ E.; lat. 48° 10′ N.; population, 2800. This town is celebrated for its wine, which is esteemed the best of the wines of Hungary. It is the product of the country around the town called the Submontine district, or Hegyallya, twenty or thirty miles in extent. The prime Tokay, or Tokay Ausbruch, as it is termed, is prepared from grapes, gathered one by one, after having become dry and sweet, like raisins, whilst hanging on the vines. A great part of the wine sold for Tokay is produced in other parts of Hungary. (See *Hungarian Wines*, vol. vi, p. 482.)

Tököly. (See *Tekeli.*)

Toland, John, was born in 1669, in

Ireland, of Catholic parents. He discarded the Roman faith before he had attained the age of sixteen, and finished his education at the universities of Glasgow and Edinburgh. He then went to England, where he was introduced to some dissenting families, who enabled him to pursue his studies for two years more at Leyden. Returning to England, he began the work, published in 1696, under the title of Christianity not Mysterious, which was presented by the grand jury of Middlesex. To withdraw himself from obloquy, he visited his native country, where he was assailed with even greater violence than in England; and the Irish parliament not only voted his book to be burned by the hangman, but ordered him to be prosecuted by the attorney-general. He was therefore obliged to quit Ireland; and, soon after his arrival in London, he published a life of Milton, and a treatise entitled Amyntor, in which he assailed the authenticity of the received canon of Scripture. In 1699, he published a life of Denzil lord Holles, and in the following year, an edition of Harrington's *Oceana*. In 1718, appeared his work entitled *Nazarenus*, or Jewish, Gentile, and Mahometan Christianity, in which he stated his own views of primitive Christianity. This was followed (1720) by a Latin tract, called *Pantheisticon*, which subjected him to the charge of atheism, and by *Tetradymnus*, in four parts, the second of which, on the exoteric and esoteric philosophy of the ancients, is deemed one of his most learned and valuable productions. In the conclusion of this work, he professed his preference of the Christian religion, pure and unmixed, to all others. He died in 1722, in the fifty-third year of his age. His posthumous works were published in two volumes, octavo, 1726, and again in 1747, with an account of his life and writings by Des Maizeaux.

Toledo (anciently *Toletum*); a city of Spain, in New Castile, capital of a province, of the same name, on the Tagus; thirty-two miles south-west of Madrid; lon. 4° 11′ W.; lat. 39° 53′ N.; population, 25,000. It is the see of an archbishop, who is primate of Spain, and who had formerly a revenue of $500,000; but it was appropriated to the public in 1820. The city is situated on the sides of a steep hill, surrounded by lofty mountains, and the environs are rocky and unproductive. It contains an alcazar or Moorish palace, now an hospital, a Gothic cathedral, twenty-five churches, thirty-eight convents and monasteries, and fourteen hospitals. The streets are narrow and steep, and the houses crowded. Here was a university, founded in 1470, suppressed in 1807. The manufactures consist of woollens, linens, silk, &c. The Toledo sword blades, formerly very noted, are manufactured in a large building on the Tagus. The secret of tempering them is said to have been recovered; and they fetch a high price. Toledo is a place of great antiquity, much celebrated in the history of Spain, and was successively the seat of government under the Goths, the Moors, and the kings of Castile.

Tolentino; a small town in the States of the Church, where a treaty of peace was concluded between general Bonaparte and the papal court, Feb. 19, 1797. (See *Pius VI.*)

Toleration, in politics; a word which indicates the misconception so long entertained respecting the right of political interference in the religious belief and worship of individuals. Every man is as much entitled to liberty of opinion on religious subjects as on any other, and has a right to adopt any mode of worship that does not disturb the peace of society. This truth, plain as it seems to a reflecting man of the present day, is one which men have attained, as they have many other important truths, only by slow degrees and bitter experience; and, in fact, few governments act fully upon this principle even now. The historian finds that intolerance has been the most deadly bane to intellectual progress. (See *Religious Liberty.*) It is remarkable that England, which has been peculiarly tolerant towards dissenting sects as far as concerned their religious exercises, has, at the same time, excluded them from many civil rights. No dissenter can be admitted, even at this day, into the universities of Oxford or Cambridge.

Tollendal. (See *Lally-Tollendal.*)

Toltecs. (See *Mexico.*)

Tomato, or **Love-Apple** (*solanum lycopersicum*). This plant belongs to the same genus with the potato and egg-plant. It was originally brought from South America, but is now cultivated in many parts of the globe, for the sake of its large, variously shaped, scarlet or orange fruit, which many esteem a great luxury. These are used in sauces, stewing, and soups, and, when boiled and seasoned with pepper and salt, make an excellent sauce for fish, meat, &c. In warmer climates, they possess more acidity and briskness, and are therefore more grateful to the palate. The plant is a tender herbaceous annual, of rank growth, weak, decumbent, fetid, glutinous and downy: the leaves somewhat resemble those of the potato, but the flowers are yellow, and disposed in large divided bunches: the fruit is pendulous, shining, and very ornamental. The tomato is one of the most common articles in Italian cookery, and its use is, at the present time, rapidly increasing in England. It is cultivated to considerable extent near London, against walls and artificial banks, being raised on a hot-bed, and transplanted like other tender annuals. With us, it is particularly cultivated in our southern and middle states.

Tomb (from the Greek word τυμβος). This term includes both the grave and the monument erected over it. In many countries of antiquity, it was customary to burn the bodies of the dead, and to collect the ashes into an urn, which was deposited in a tomb. Among the Greeks, these tombs were generally constructed outside the walls of the cities, with the exception of such as were raised to the founders of the place or to heroes. In Campania, several tombs of the ancient inhabitants have been discovered, containing beautiful Grecian vases (improperly called Etruscan), of which Mr. Hamilton formed two collections, the first published by D'Ancarville, the second by Tischbein. The Campanian tombs were formed by an enclosure of cut stones, and covered with a sort of roof of flagstones, shelving on both sides. The dead body was stretched on the ground, the feet turned towards the entrance of the sepulchre, and the head ranged against the wall, from which were suspended, by bronze nails, vases of terra cotta, whilst others of a similar kind were disposed around the body. In the plains of Etruria are also many shallow sepulchral grottoes scooped out of the living rock. These cells or sepulchres receive the daylight only through an opening placed in the middle of the vault, and which communicates with the superficies of the mountain or rock. The interior is often ornamented with paintings. The Romans designated by *sepulchrum* the tomb wherein the bodies or the ashes of the defunct were deposited, also the magnificent monuments (*mausolea*), sepulchral arches, destined to the great and the rich. Tombs where funeral rites were celebrated, yet without depositing the body, were called *cenotaphs*. Persons of high rank had sometimes, in their palaces, sepulchral vaults, where were deposited, in different urns, the ashes of their forefathers. The pyramid of Cestius, at Rome, constructed of Parian marble, and which contained a chamber ornamented with beautiful paintings, was the tomb of an individual surnamed Cestius, one of the *septemviri epulones*. After the decline of the arts, this species of architecture was much neglected, the tombs becoming simply masses of large stones, upon which were engraved rude effigies of the deceased, and inscriptions stating his age and the circumstances of his death, &c. Sometimes, for marble or stone, plates of copper were substituted, rarely enamelled, but generally engraved. The dead person is here represented as clad in the habit commonly worn by him when living; his hands are joined as in the act of prayer; and two angels are, in most instances, placed near the cushion upon which his head reposes, to indicate his admission into heaven. The revival of art brought improvements in the construction of tombs. On the splendid tomb of Julius II, Michael Angelo exercised his surpassing talent. (See *Sarcophagus*; also *Les Monumens de la Monarchie Française*, by Montfaucon; *Les Antiquités Nationales*, by A. L. Millin (5 vols., folio, or 5 vols., 4to.); *Sepulchral Monuments* (3 vols., folio), &c. &c.

Tombeckbee, the western branch of Mobile river, in Alabama, rises in the ridges that separate its waters and those of the Tennessee, in the northern parts of the state, and receives some of its branches from a range that diverges from the Tennessee hills, and runs south along the state of Mississippi. It receives in its progress several considerable streams from the state of Mississippi on the west side. It meanders through the Indian country and a tract purchased by French immigrants. Eighty miles above St. Stephens, it receives the Black Warrior, to which place small sea vessels ascend. In moderate stages of the water, it affords steam-boat navigation to Tuscaloosa, 320 miles from Mobile. The lands on its banks are exceedingly fertile.

Tombuctoo. (See *Timbuctoo*.)

Tomcod. (See *Cod*.)

Tomsk; a government of Russia, in Siberia, bounded north by Yeniseisk, east by Irkutsk, south by Chinese Tartary, and west by Tobolsk; population, 352,000, square miles, 300,000. (See *Siberia*.) The capital, of the same name, is situated on the Tom, 540 miles east of Tobolsk; lon. 85° 21′ E.; lat. 56° 30′ N.; population, 12,000. It contains five churches and two convents, is extremely well situated for commerce, and the inhabitants carry on a considerable trade. It lies in the road from the towns in the eastern and northern parts of Siberia, and on the great line of rivers that connect Tobolsk with the Chinese frontier; so that all caravans going to and from China pass every year through this town, besides a caravan or two going from the country of the Calmucks. Tomsk is represented as much behind Tobolsk and Irkutsk in civilization, and the inhabitants are excessively addicted to intoxication.

TONE (Greek τονος, from τεινω, to stretch or expand), in painting; a term used chiefly in coloring, to express the prevailing hue. Thus we say this picture is of a *dull tone*, of a *lively tone*, of a *soft tone*, of a *clear tone*, &c. To *heighten the tone* of a work, is to render the colors more vivid, and, in some instances, the masses more decided and the figures more striking. The word *tone*, in relation to *chiaroscuro*, expresses the degree of brightness or intensity. *Tone* is not precisely synonymous with *tint;* the latter relating rather to the *mixture* of colors, and the former to their *effect*.

TONE, KEY, SCALE, SYSTEM OF TONES. Tone, in music, signifies a sound considered in the relations of height or depth; also each particular sound in our musical system. The tone, in this fundamental sense, is determined by the greater or less quickness of a uniform series of vibrations in a sonorous body. Musical tones differ from those of common speech chiefly by being more prolonged, so as to give the ear a more decided perception of their height, formation, and relations to each other. (For the production and propagation of sounds, in general, see *Acoustics*.) The difference of one tone from another, in respect to height or depth, forms the interval. (q. v.) But as music deals only with those which are capable of producing harmony, the whole body of sounds used in music has been brought into a system, which exhibits their different height and depth, in regular order. The compass of tones is not indefinite, because the ear is unable to perceive a tone, when the vibrations of the body producing the sound are either excessively quick or slow; yet they are not limited to a definite number. This measured series of tones is an invention of modern times, since the nature of sounds has been accurately investigated, and their relations settled by musical instruments. Man in a state of nature, or a state but little removed from this, is guided only by his feelings, in the production of tones, and knows nothing of a regulated arrangement; hence it is so difficult to adapt the songs of savages to our diatonic system. As instruments do not, like the human voice, produce all the various tones without particular contrivances, those who first endeavored to produce a certain tune by means of instruments, were obliged to assign to them, as it were, certain tones, and arrange these in regular order; strings were to be tuned in a certain way, for producing certain sounds; a distinct length was to be given to them, and holes were to be made at certain distances in wind instruments. The relations of tones first perceived by the ear, were undoubtedly those which were thus fixed. Thus the fable says, that Hermes strung the lyre with four strings, and tuned them in the proportion of the fourth, fifth and octave; and, probably, these tones were sufficient for the simplest accompaniment of the voice. By degrees the other tones of the octave were added. In this first system, which embraced four strings or tones, were comprehended two fourths, forming the two extreme tones, as **a d e a**: the lowest tone was called A. Hence this system, or the division of tones according to fourths, is called *tetrachord*. When the tones were increased in number, it seems to have been done also by fourths; so that, e. g. to the chord **d** the fourth **g** was given, and to e (descending) the fourth **b**. Now **g** had not yet its pure fourth; but, in order not to go beyond the octave, the same was taken within the octave from **g** downward: this received the fourth **f**, and thus the whole octave was formed, or a series of tones, extending from a fundamental tone to its octave, which is called the *scale*. The scale thus formed consisted of the tones

A B C D E F G a

which had the proportions

$$1 \quad \frac{8}{9} \quad \frac{27}{32} \quad \frac{3}{4} \quad \frac{2}{3} \quad \frac{81}{128} \quad \frac{9}{16} \quad \frac{1}{2}.$$

When the fourths were divided, in different ways, into smaller intervals, the genera of tones originated, viz. 1. The enharmonic (q. v.); 2. the chromatic (q. v.); 3. the diatonic, in which whole and half degrees alone appear. The modern diatonic system is that division of tones, according to which the octave is divided into seven tones, consisting of five entire and two half degrees (also called *tones;* hence *tone* often stands for the interval of a whole tone), and in which we never proceed by smaller divisions than semitones, nor ever by two successive semitones. Now, as the ancients had not adopted the semitones c♯, d♯, f♯, g♯, into their system, and the scale or progressive series of eight tones in the octave (which, ascending from the fundamental tone, are designated by numbers, as the second, third, &c.), was probably as follows:

C D E F G A b B c,

since the seventh degree had a double tone, small and great B (the latter of which was afterwards changed, by mistake, into H, in the German notation), they thus adopted two chief classes or modes of sounds, the *sharp* and the *flat*. (These terms are at present used also in another sense, as will appear below.) If on the double B the higher tone (now h) was taken, the song was called *cantus durus*; if the lower one was taken, the *cantus mollis* was produced. Now, as every one of the seven tones of the octave may be taken as the fundamental tone or *tonic* (q. v.), and thus the semitones of the diatonic system may assume constantly a different situation, seven different keys originate. The ancient church singers, who were not allowed to go beyond the limits of an octave, were enabled, by sometimes ascending from the tonic to the fifth and eighth, sometimes from the fifth of the tonic (the *dominant*) to the eighth and twelfth, to obtain a *duplication* of their modes, viz. the *authentic* and the *plagal*. If each tone of their system had had its pure fifth and fourth, there would have been in the whole fourteen keys, viz. seven authentic and seven plagal; but as the H had no fifth, and the F no fourth, the former could only be plagal, the latter only authentic; hence there were but twelve, viz. six authentic and six plagal keys in the ancient church music. Every one of these keys, also called *tones* in ecclesiastical music, had its proper Greek name, contained in the following table:—

Auth.	d	e	f	g	a	h	c̅	d̅	Doric	*Key.*
Plag.	A	H	c	d	e	f	g	a	Hypo-Doric	
Auth.	e	f	g	a	h	c̅	d̅	e̅	Phrygian	
Plag.	h	c	d	e	f	g	a	h	Hypo-Phrygian	
Auth.	f	g	a	h	c̅	d̅	e̅	f̅	Lydian	
Plag.	c	d	e	f	g	a	h	c̅	Hypo-Lydian	
Auth.	g	a	h	c̅	d̅	e̅	f̅	g̅	Mixo-Lydian	
Plag.	d	e	f	g	a	h	c̅	d̅	Hypomixo-Lydian	
Auth.	a	h	c̅	d̅	e̅	f̅	g̅	a̅	Æolian	
Plag.	e	f	g	a	h	c̅	d̅	e̅	Hypo-Æolian	
Auth.	c	d	e	f	g	a	h	c̅	Ionian	
Plag.	G	A	H	c	d	e	f	g	Hypo-Ionian	

There yet remain a number of choral melodies in these keys. According to the ancient diatonic system, no tone, with the exception of b, could be enlarged. The feeling of this imperfection, and the want of transposition, gave rise to the invention of new semitones between the whole tones; hence the octave was divided into twelve degrees or semitones, so that, with the repetition of the fundamental tone, it received thirteen degrees and strings. If, now, to every string of the instrument its pure third (both lesser and greater), pure fourth and fifth had been given, many more intermediate tones would have been produced, and, by the use of quarter-tones, the practice of music would have been rendered infinitely difficult. The thirteen tones and chords, therefore, were retained, so that each of the twelve tones of the octave may be made the fundamental tone of the sharp or flat key, yet not so that all the intervals are given perfectly pure, but sometimes one, sometimes another tone is made a little sharper or flatter. This is called the temperament of the system of tones. In Sulzer's work it is defined as a small deviation, judiciously made from perfect correctness in an interval, in order to render it more useful in connexion with others. He also defines it, more particularly, as the arrangement of a whole system of tones, in such a manner that some tones lose a little of their perfection, so that they may serve in different keys, and all remain in the highest attainable harmony. The object of temperament is that each of the twelve tones of the system may be used as a fundamental tone in the flat and sharp keys, without increasing the number of strings, that the octave may be perfect, and the fifth not fall much short of being perfect. The even temperament is that in which all the twelve half-tones or intervals of the system are measured equally, by which, consequently, all the perfect fifths lose something of their original purity, which is added to the fourths, and also a major third is tuned as much too high as the others. The uneven temperament is that in which some fifths and thirds are so tuned that some are a little higher, some a little lower than perfect. The chief harmony, or the chief concord, of a tone can be twofold, according as it has a major or minor third; and this is called, in a narrower sense, *key*, or *mode*, viz. in the first case, the sharp or greater third, in the second, the flat or smaller third. Hence there are, in modern music, twenty-four scales or keys in the wider sense (genera of tones capable of being connected in a musical composition, in relation to a fundamental tone). Each flat and sharp key has its peculiar character: the latter serves more particularly for the expression of gay and lively; the former, of soft and melancholy feelings. Uncivilized nations prefer the flat keys. Every scale has, also, according to its fundamental tone, and its situation and relations to the whole system, its peculiar character, so as to be particularly fit for the expression of certain emotions. This point is connected with the fact, that the flat and sharp keys are not entirely equal in all the tones, as neither the thirds nor the sixths are equal. This advantage of difference of the scale does not take place in the even temperament, in which the scales of C major and A minor are merely repeated in the other tones. The following is a view of all the scales in both keys, in regard to which, we must observe, 1. that in the sharp key the same tones are played as well ascending as descending, only in reversed order; but in the flat key the major sixth and seventh are played in ascending; the latter in order to have a leading tone (sharp seventh), the former to avoid the unharmonic progression of the enlarged second; wherefore more signs of transposition appear in the ascending series; 2. that both scales contain an octave of five whole and two half-tones, and that the different situation of the latter (which, with the ancients, could not be transposed into all tones), with the changes thus made in the degrees of perfectness, produce different shades or qualities in the scales.

Table of the Scales in Respect to the Relations of their Tones, and according to their Designation.

Major or Sharp Keys.

C natural	C	D	E	F	G	A	H*	C†
G with 1 sharp, ...	G	A	H	C	D	E	♯F	G
D " 2 "	D	E	♯F	G	A	H	♯C	D
A " 3 "	A	H	♯C	D	E	♯F	♯G	A
E " 4 "	E	♯F	♯G	A	H	♯C	♯D	E
H " 5 "	H	♯C	♯D	E	♯F	♯G	♯A	H
Fis (F♯) 6‡ "	♯F	♯G	♯A	H	♯C	♯D	♯E	♯F
Cis (C♯) 7 "	♯C	♯D	♯E	♯F	♯G	♯A	♯H	♯C
Gis§ (G♯) 8 "	♯G	♯A	♯H	♯C	♯D	♯E	♯♯F	♯G
Dis (D♯) 9 "	♯D	♯E	♯♯F	♯G	♯A	♯H	♯♯C	♯D

Sharp Keys with Flats at the Signature.

F with 1 flat, ...	F	G	A	♭H	C	D	E	F
B " 2 "	♭H	C	D	♭E	F	G	A	♭H
Es (E♭) 3 "	♭E	F	G	♭A	♭H	C	D	♭E
As (A♭) 4 "	♭A	♭H	C	♭D	♭E	F	G	♭A
Des (D♭) 5 "	♭D	♭E	F	♭G	♭A	♭H	C	♭D
Ges (G♭) 6 "	♭G	♭A	♭H	♭C	♭D	♭E	F	♭G

In this table are enumerated sixteen sharp keys; but as *cis* and *des*, *dis* and *es*, *as* and *gis*, *ges* and *fis*, can be represented on most instruments (keyed instruments) only by one tone, and as compositions are rarely written in the keys of *cis*, *dis*, and *gis*, on account of the difficulty of playing where the sharps amount to seven and nine (not to mention other objections), generally twelve keys only are enumerated.

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* The letter H is used in German music instead of B. (See p. 290, col. i.)

† This scale is considered as the model. It must be observed here that the Italians and French express the tones contained in it by the syllables *ut* (or *do*), *re*, *mi*, *fa*, *sol*, *la*, *si*. (See *Solfeggio*.)

‡ The fundamental tone and octave have but one sharp.

§ G sharp has a double sharp, which has the value of two single ones. The latter is true also of the subsequent scales.

Table of Minor or Flat Keys.

A natural	In the descending series.	A	G	F	E	D	C	H	A
E with 1 sharp		E	D	C	H	A	G	♯F	E
H “ 2 “		H	A	G	♯F	E	D	♯C	H
Fis (F♯) 3 “		♯F	E	D	♯C	H	A	♯G	♯F
Cis “ 4 “		♯C	H	A	♯G	♯F	E	♯D	♯C
Gis “ 5 “		♯G	♯F	E	♯D	♯C	H	♯A	♯G
Dis “ 6 “		♯D	♯C	H	♯A	♯G	♯F	♯E	♯D

A natural	In the ascending series.	A	H	C	D	E	♯F	♯G	A
E with 1 sharp		E	♯F	G	A	H	♯C	♯D	E
H “ 2 “		H	♯C	D	E	♯F	♯G	♯A	H
Fis “ 3 “		♯F	♯G	A	H	♯C	♯D	♯E	♯F
Cis “ 4 “		♯C	♯D	E	♯F	♯G	♯A	♯H	♯C
Gis “ 5 “		♯G	♯A	H	♯C	♯D	♯E	♯♯F	♯G
Dis “ 6 “		♯D	♯E	♯F	♯G	♯A	♯H	♯♯C	♯D

Minor, with ♭.

D with 1 flat	In the descending series.	D	C	♭H	A	G	F	E	D
G “ 2 “		G	F	♭E	D	C	♭H	A	G
C “ 3 “		C	♭H	♭A	G	F	♭E	D	C
F “ 4 “		F	♭E	♭D	C	♭H	♭A	G	F
B “ 5 “		♭H	♭A	♭G	F	♭E	♭D	C	♭H
Es “ 6 “		♭E	♭D	♭C	♭H	♭A	♭G	F	♭E
H “ 7 “		♭A	♭G	♭F	♭E	♭D	♭C	♭H	♭A
Des “ 8 “		♭D	♭C	♭♭H	♭A	♭G	♭F	♭E	♭D
Ges “ 9 “		♭G	♭F	♭♭E	♭D	♭C	♭♭H	♭A	♭G

D with 1 flat	In the ascending series.	D	E	F	G	A	♮H	♮♯C	D
G “ 2 “		G	A	♭H	C	D	♮E	♯F	G
C “ 3 “		C	D	♭E	F	G	♮A	♮H	C
F “ 4 “		F	G	♭A	♭H	C	♮D	♮E	F
B “ 5 “		♭H	C	♭D	♭E	F	♮G	♮A	♭H
Es “ 6 “		♭E	F	♭G	♭A	♭H	♮C	♮D	♭E
H “ 7 “		♭A	♭H	♭C	♭D	♭E	♮F	♮G	♭A
Des “ 8 “		♭D	♭E	♭F	♭G	♭A	♮♭H	♮C	♭D
Ges “ 9 “		♭G	♭A	♭♭H	♭C	♭D	♮♭E	♭F	♭G

In these also, *es* and *dis*, *as* and *gis*, *des* and *cis*, *ges* and *fis*, are generally the same as the sharp keys of these tones. In Sulzer's work, the scales are also brought into the following view, according to their degree of sharpness and perfectness, from which, at the same time, the most natural transitions from one fundamental tone to another may be seen, which the composer must know, in order to find, in each case, the most proper tone for the expression of each musical conception. Among the sharp tones, the purest are C, G, D, F; C is the purest, G less so; A, E, H, *fis*, are harsher; B, *cis*, *gis*, *dis*, the harshest. Among the flat tones, the purest are A, E, H, D; A is so in the highest degree; *fis*, *cis*, *gis*, *dis* are softer; C, G, F, B, the softest. He adds, that the purest tones are less suitable for pathetic expression, but, with reference to the peculiar expression of the sharp and flat keys, are useful for noisy, warlike, lively and gay music. The tones, according as they are less pure, are more suitable for the expression of strong or mixed feelings, and the harshest and softest produce the most powerful effect.—*Tone* is used also to express the peculiarities in the sound of different instruments, though the different sounds may have the same place in the system of tones. The human voice has the finest and most expressive tone; and it may be said that the nearer an instrument approaches to this tone, the more perfect it is. It is of the utmost importance to a composer to know the peculiar character of each instrument, that he may make a proper use of its tones.

TONG, or TOUNG (Chinese for *copper*); in many geographical names, as *Tong-chan* (Copper mountain). Tong also signifies, in Chinese, *east*; as *Tong-kong* (Eastern palace).

Tongataboo (properly *Tonga; taboo* being merely an epithet signifying *sacred*), one of the Friendly islands, about sixty miles in circuit, was first discovered by Tasman, who called it *Amsterdam*. The productions and climate are the same as those of the other Friendly islands, and the Society islands. (See the articles.) The Wesleyan missionary society has established a mission here, and many of the natives have been converted to Christianity.

Tongue; an organ found in most animals, and serving in many as the organ of taste (q. v.); in all for taking in food. We are not justified in considering the tongue as an organ of taste in all animals; and Blumenbach thinks that it serves this purpose in very few genera of birds.—See his *Manual of Comparative Anatomy*, 2d Engl. edit. by W. Coulson (London, 1827). The human tongue is a soft, fleshy viscus, very movable in every direction, situated interiorly in the cavity of the mouth, and constituting the organ of taste. It is composed of muscular fibres, covered by a nervous membrane, on which are a great number of nervous *papillæ*, particularly at the point and sides, the *rete mucosum* and *epidermis*. The use of this organ is for chewing, swallowing, sucking and tasting.

Tonic, in music; the first or fundamental note of the diatonic scale, and, in general, the fundamental and key note of every piece. The fifth note (counted upwards) from the tonic is the dominant.

Tonics, in medicine (from τονος, tension), are medicines given to increase the tone of the fibres of the stomach and bowels, and, in fact, of the muscular fibre in general: such are vegetable bitters, also stimulants, astringents, &c.

Tonnage. (For the mode of measuring, see *Ship*.)

Tonnère, Mount (in German, *Donnersberg*, Thunder mountain); a summit of the Vosges, on the left bank of the Rhine, ten miles from Worms. It is about 2300 feet high; and half way up its side is a village called *Donnersfeld*, with the ruins of a castle. The French gave the name of this mountain to a department 2700 square miles in extent, with a population of 430,000; capital, Mentz. It is now divided between Bavaria and Hesse-Darmstadt.

Tonquin; a country of Asia, bounded north and east by China, south by Cochin-China, and west by Laos; about 350 miles in length, and 220 in its greatest breadth, extending from lat. 19° to 23° N., and from lon. 104 to 108 E. The climate is mild and temperate. The rainy season begins about April, and continues till August, and is the most unhealthy part of the year. The country, lying low and flat, is frequently overflowed by violent rains, so as to do great injury to the harvest; and, on the other hand, if the rains be not in sufficient quantity to nourish the rice, a famine is the consequence. The principal river of the country is Song-ca (Song-koi). Tonquin is but imperfectly known to us: it is a viceroyalty of Cochin-China, both which countries are known to the Chinese by the common name of *Annam*. It is the most valuable and populous part of the empire, (See *Cochin-China*.) Rice is almost the only grain cultivated. Other productions are potatoes and yams; a variety of fruits, mangoes, lemons, cocoanuts, and ananas; sugar-cane, indigo, areca, betel net, the tea plant, &c. Some of the principal articles of commerce are silk and lacquered ware. The chief town, Kecho, or Cachao, on the Song-ca, eighty miles from the sea, is supposed, by Crawfurd, to contain a population of about 150,000 souls: twenty miles lower is Hean, a considerable town; and forty miles below Hean is Domea, where the English and Dutch merchants usually stopped, and were rowed to Cachao in boats. See Crawfurd's *Embassy to Cochin-China and Siam* (London, 1828), and the *Nouvelles Lettres Edifiantes* (Paris, 1821).

Tonsure (*corona clericalis*). A shaved crown has been, from time immemorial, one of the honorary distinctions of the priest. The first Christian teachers, however, wore their hair like other men, in order to distinguish themselves from the heathen priests. Penitents had their heads shaved, and, in imitation of their example, the monks did the same: it was not until the sixth century, that, the fashion of shaving the head, with many other peculiarities of the monks, was adopted by the secular clergy. A difference was then made between a shaved forehead, which was called *tonsure of the apostle Paul*, and a shaved crown, called *tonsure of the apostle Peter*. The former became customary with the Greeks, Britons and Irish, the latter in the Roman church and the countries most under its influence. At a council held at Toledo, in 633, the latter mode was formally prescribed, and called *corona clericalis*. Since that time the Roman tonsure has remained common to the clergy and monks in the west of Europe, and furnishes a means to distinguish the higher clergy from the lower, as the extent of the tonsure increases with the rank. The pope, if he is young enough to have hair, which is seldom the case, loses nearly all on the fore part of the head. Many religious orders (e. g. the Franciscans) allow only a narrow strip of hair around the head to grow: all above and below is shaved. Shaving the hair precedes consecration: it is performed by the bishop. The tonsure qualifies the subject for holding a simple benefice, and subjects him to the laws relating to ecclesiastics. The clergy of the Greek church retain the old custom.

Tontines; a kind of life annuity. When the credit of the governments in Europe, in the 17th century, was continually sinking, and rich men would not loan them money, Lorenzo Tonti, an Italian, invented a peculiar species of life annuities, called after him *tontines*, and first introduced them into France, in 1653, under Louis XIV. His method was the following:—A certain capital was loaned by a society, generally, at the usual rate of interest. This interest was divided equally among the members of equal age; and among those of unequal ages it was divided in proportion to their age. This interest was paid as long as one of the society remained alive; and when one of the members died, his portion of the income was inherited by the surviving members, so that the last survivor enjoyed, during his life, the whole income. At his death the interest ceased, and the borrower obtained the capital. In the formation of a tontine contract, the members of the society were divided into nine classes: 1. those from one to five years old received three per cent.; 2. from five to ten, three and a half per cent.; 3. from ten to fifteen, four per cent.; 4. from fifteen to twenty, four and a half per cent.; 5. from twenty to twenty-five, five per cent.; 6. from twenty-five to thirty, five and a half per cent.; 7. from thirty to forty, six per cent.; 8. from forty to fifty, six and a half per cent.; 9. from fifty to sixty, eighty, ninety, seven per cent. In this way the whole capital paid only five per cent.; and many more lenders were found to take part in tontines than in the old life annuities, in which five per cent. was paid to each individual. (See *Annuities*.)

Tooke, John Horne, was born in Westminster, in 1736. His father was a poulterer, who had acquired considerable property. John, the third son, was educated both at Westminster and Eton, whence he was removed to St. John's college, Cambridge. In 1756, he had entered himself of the Inner Temple; but, at the request of his family, he consented to be ordained, and was inducted to the chapelry of New Brentford, which his father had purchased for him. Three years afterwards, he accompanied, as travelling tutor, the son of Mr. Elwes of Berkshire, in a tour to France. On his return, he took a warm share in politics, in behalf of Wilkes, to whom, on a second visit to Paris, he was personally introduced. When he returned to England, he resumed his clerical functions, and obtained some distinction in the pulpit, until the return of Wilkes plunged him again into politics. He was the principal founder of the Society for supporting the Bill of Rights; and, in 1770 and 1771, a public altercation took place between Messrs. Wilkes and Horne, on account of the attempts made by the former to render the society instrumental to the discharge of his private debts. It was through his means that two printers of the newspapers were, in 1771, induced to violate the orders of the house of commons, by publishing their debates, which brought on those proceedings which terminated in a defeat of the house, and the unopposed practice of such publication ever since. The same year also witnessed his contest with Junius, in which, in the general opinion, he came off victor. In 1773, he resigned his clerical gown, and shut himself up in retirement, with a view to study for the bar; and it was by affording legal advice to Mr. Tooke of Purley, in his opposition to an enclosure bill, and defeating the same by a boldness of stratagem peculiarly in character, that he acquired the good will, and ultimately shared in the fortune, of that gentleman. He was a warm opponent of the American war, and was prosecuted for sedition, for the wording of a resolution, by which the Constitutional Society voted £100 to the widows and children of the Americans who fell in the battle of Lexington. For this obnoxious paragraph he was tried at Guildhall, in 1777, on which occasion he defended himself with his characteristic spirit and acuteness, but was sentenced to a year's imprisonment and a fine of £200. In 1779, after having fully prepared for the bar, he applied for admission to the society of the Inner Temple, and was refused, on the ground that he was still a priest, and ineligible—a decision which destroyed all his future views in this profession. In 1780, he published a keen review of lord North's administration, in a pamphlet entitled Facts, and in 1782, a Letter on Parliamentary Reform, with a Sketch of a Plan, which did not embrace the principle of universal suffrage. About this time, he became the avowed friend of Mr. Pitt, then also favorable to parliamentary reform, and a vehement opponent to Mr. Fox, for his coalition with lord North. In 1786, he appeared in a character more important to his lasting reputation than that of a subordinate politician, by the publication of an octavo volume, entitled *Epea Pteroenta*, or the Diversions of Purley, which he afterwards extended to two volumes quarto. This celebrated work contains those ideas concerning grammar, and the formation of words, of which the germ had appeared in a letter to Mr. Dunning some years before. Of these, one of the most prominent was the derivation of prepositions and conjunctions from verbs and nouns, and, in consequence, assigning them a determinate meaning, often different from that which had been arbitrarily given to them. The knowledge of language and logical acuteness which he displayed in this performance, raised him to a high rank as a philologist. In 1788, he published Two Pair of Portraits, the figures in which were the two Pitts and the two Foxes, of the past and present generation, the preference being given to the Pitts. In 1790, he offered himself as a candidate for Westminster, in opposition to Mr. Fox and lord Hood, when he distinguished himself by a strong vein of humor, in his daily addresses to the populace; and, although he failed, he received one thousand seven hundred votes, without solicitation or corruption. In the year 1794, he was apprehended and committed to the Tower on a charge of high treason, founded on the presumed objects of the corresponding societies to overthrow the constitution. His trial, with that of the other parties accused at the same time, holds a conspicuous place in the historical annals of a period rendered so remarkable by the excitement produced by the French revolution. The trial of Mr. Tooke, although made interesting by the ease, self-possession and acuteness displayed by the accused, was deprived of much political importance by the previous acquittal of Hardy insuring his own. From this time, however, he was more cautious in his company, and seems to have declined the visits of persons of violent characters and principles at Wimbledon. After the death of Mr. Tooke of Purley, he had taken his name, in consequence of inheriting a portion of his fortune. In 1796, he again offered himself for Westminster, and failed; and in 1801, he accepted a seat for Old Sarum, on the nomination of lord Camelford. His parliamentary career was neither long nor distinguished; but an attempt to exclude him, on the ground of ordination, was turned aside by the minister, Mr. Addington, who substituting a bill to determine the future ineligibility of persons in that predicament, the political life of Mr. Tooke closed with the dissolution of parliament in 1802. In 1805, he published a second part of the Diversions of Purley, which is chiefly dedicated to etymology, and adjectives and participles, and their formation; but also abounded, like the former, with various satirical strictures on literary characters of note. He died at Wimbledon, in 1812, in his seventy-seventh year. His latter days were cheered by easy circumstances, and the attention of numerous visitors, whom he treated with great hospitality, and amused with his conversation, which was singularly pleasant and lively, although, at the same time, he would often make his guests objects of his satire, which he would cover with the most imperturbable countenance. At the same time his manners were polished. He manifested a libertinism, in his habits and discourse, very unbecoming his profession. As a scholar, he possessed considerable learning; but his knowledge of modern languages was more considerable than of Greek and Latin: his acquaintance with the Gothic was very extensive. He was never married, but left natural children, to whom he bequeathed his property.

Tooth. (See *Teeth.*)

Top; a sort of platform surrounding the lower mast head, from which it projects on all sides like a scaffold. The principal intention of the top is to extend the top-mast shrouds so as to form a greater angle with the mast, and thereby give additional support to the latter. The top is also very convenient to contain the materials necessary for extending the small sails, and for fixing and repairing the rigging and machinery with greater expedition. In ships of war, the tops are furnished with swivels, musketry, and other fire-arms, and are guarded with a fence of hammocks in time of action. Finally, the top is employed as a place for looking out either in the day or night.

Top-Mast; the second division of a mast, or that part next above the lower mast.—*Top-gallant-mast*; the mast next above the top-mast, and is generally the uppermost mast.—*Top-sails*; large sails extending across the top-masts.—*Top-gallant-sails* are extended above the top-sail yards, in the same manner as the top-sails are extended above the lower yards. (See the article *Ship*.)

Topaz; a gem in jewelry, and one of the most interesting species in mineralogy. Its crystals are short prisms, terminated at one or both extremities by a great number of facets, the primary form being a right rhombic prism of 124° 22′. It cleaves with readiness at right angles to the prismatic axis, but with considerable difficulty parallel to the lateral faces of the primary form; fracture more or less perfectly small conchoidal, or uneven; the lateral faces are deeply striated vertically, while the terminal planes are smooth and brilliant; lustre vitreous; color white, yellow, green, blue; the shades are generally pale; transparent to translucent; hardness intermediate between quartz and corundum; specific gravity 3.49. It also occurs massive, the composition being granular, and the individuals varying much in size. There occurs, also, a columnar composition, in which the individuals are thin, long and parallel, and their faces of composition longitudinally streaked. Two varieties of topaz have, without sufficient reason, been treated as forming separate species, viz. *pyrophysalite* and *pycnite*. The first of these occurs, in large individuals, of a pale, greenish-gray color, and faint translucency, imbedded, in round masses, in a granite composed of white quartz, feldspar and mica, at Fahlun and Finbo in Sweden. The pycnite (schorlite) consists of thin and straight columnar particles of composition, forming masses of considerable size, in a rock composed of quartz and mica, at Altenberg in Saxony, in Siberia, and at Kongsberg in Norway. But these varieties are united with common topaz by transitions, which render their distinction often impossible. Topaz consists, according to Berzelius, of

	Topaz.	Pyrophysalite.	Pycnite.
Alumine, . .	57.45 . .	57.74 . .	51.00
Silex, ...	34.24 . .	34.36 . .	38.43
Fluoric acid,	7.75 . .	7.77 . .	8.84

In a strong heat, the faces of crystallization, but not those of cleavage, are covered with small blisters, which, however, immediately crack. With borax it melts slowly into a transparent glass. Its powder colors the tincture of violets green. Those crystals which possess different faces of crystallization on opposite ends, acquire different kinds of electricity, on being heated; by friction it acquires positive electricity. Topaz enters into the composition of several granitic rocks; thus it forms, with quartz and tourmaline, the topaz-rock of Saxony, and is found crystallized in its drusy cavities. It occurs, also, in irregular beds, either with quartz and mica, like the variety called *pycnite*, or it is found in veins and beds in gneiss, mica-slate, clay-slate and porphyry, along with tin ore, wolfram, fluor, beryl, quartz, &c. It is met with, besides in the alluvial deposits of rivers, along with other gems. Among the varieties of topaz, employed in jewelry, are the following, which depend upon their colors: 1. *colorless*, or *white topaz* (called *nova mina*); its localities are New Holland, Brazil, and the Ural mountains, and it commonly occurs in rolled pebbles; 2. *blue topaz*, or *Oriental aqua-marine*; it comes from Siberia, and, of late, has been found in Brazil; 3. *straw-yellow topaz*, found in the Urals, and at Mucla in Asia Minor; 4. *wine-yellow topaz*, found in Saxony; 5. *brownish-yellow topaz*, from Brazil; 6. *pink-colored topaz*, which is produced by heating, in a sand bath, to a moderate degree, the deep-yellow Brazilian crystals. The topaz is now too abundant in nature to command the extravagant prices of some other gems; for it is not only afforded plentifully in Brazil, but it is found also in the tin mines of Saxony, Bohemia and Cornwall; also at Cairngorm in Aberdeenshire, where pieces of very extraordinary dimensions have been found possessed of very rich brownish tints. The mountains of Altai and the Urals produce an immense quantity, in like manner, of this gem; and large bags of pebbles and loose crystals are frequently brought from Brazil and New Holland. The U. States have as yet furnished but a single locality of topaz: it exists at Munroe in Connecticut, and occurs in a vein about one foot wide, accompanied by fluor, mica and quartz. The vein traverses gneiss. It occurs both crystallized and massive; but the crystals are rarely transparent. They vary in size from many pounds weight down to that of a few grains. Their prevailing color is white.

Tophet, or **Hinnom**; a valley near Jerusalem, called, also, in the New Testament, *Gehenna* (Γεεννα), by corruption from the Hebrew *Ge* (valley), and *Hinnom*. It was infamous as the spot in which the

Jews passed their children through the fire to Moloch, god of the Ammonites. The name *Tophet* is from the Hebrew word for *drum*, because a drum was used to drown the cries of the victims. The valley was watered by the brooks Kedron and Siloam, and, being a fertile and agreeable spot, was at one time occupied with gardens, whence the propriety of Milton's expression:

> The pleasant valley of Hinnom, Tophet thence,
> And black Gehenna called.

It was, at a later period, shunned as unclean, by the Jews, and made the receptacle of the filth of the city. The Aceldama (q. v.) was adjoining it. The Gehenna of the New Testament is rendered *hell* in the English version; and with the Mohammedans it is the name of one of the circles of the fiery pit.

Topical, in medicine (from τοπος, place), is used of remedies applied externally to the suffering part, and intended to have an effect there only, such as ointments, cataplasms, &c.

Topics. The ancient Greek and Roman teachers of rhetoric designated by this word (derived from τοπος, place, passage) a systematic representation of certain general notions and propositions, which, as they thought, might be advantageously used, by public speakers, in the selection and invention of arguments. They distinguished the *loci argumentorum* (sources of proofs), and the *loci communes* (common places). Under the first, they comprised general notions, from which the orator might deduce proofs by comparing with them the case in question, e. g. the similar, the dissimilar, the opposite, cause and effect, genus and species, &c. Common places were general propositions, formed by transferring the proofs, which were deduced from the *loci argumentorum*, and applicable only to the special case, again to the genus. Such a common place, in the forensic discourses of the ancients, was the position, All legal causes are so far of equal importance as the question is, What is just and right? Compare Aristotle's *Rhetoric* (lib. i, particularly chap. 2, 3); the author of the rhetorical work *Ad Herennium* (1st, 2d, 3d book); Cicero *De Inventione* (lib. i, chap. 6—15; chap. 24—52; and lib. ii.); Cicero's *Topica* and *Partitiones Oratoriæ* (chap. 1, 2, 3, 9—15); also *De Oratore* (lib. ii, chap. 30 et seq.); Quintilian's work *Institutiones Oratoriæ* (lib. v.). The ancients applied topics exclusively to political and forensic oratory; but some moderns, especially Germans, have employed them for pulpit oratory, and call them, in this case, *homeletic topics*. They used *topics* and *topology* also to signify a theory of the principles which the theologian should follow, in selecting and applying the various passages of the Bible, to prove important doctrines, or to judge of those which are generally used for this purpose.

Topography (from τόπος, place, and γραφω, I write); the accurate description of a country, place, &c., going into details into which geography does not enter. Rivers, rivulets, mountains, hills, forests, rocks, roads, particularly inhabited places, bridges, &c., are proper subjects for topography. Topographical maps are such as treat of all these subjects, and even show the variety of soils, &c. The angle of declination of elevated plains, mountains, &c., forms a particularly important subject of topographical surveys. Lehmann (q. v.) has invented a very excellent mode of preparing topographical maps.

Tora (Hebrew, the *law*) signifies the five books of Moses, in which the written law of the Hebrews is contained. (See *Hebrew Literature*.) In the synagogues, *tora* is used for the parchment roll which contains these five books, and from which portions are read or sung on the Sabbath. The *tora* is contradistinguished to the *cabala* (q. v.), or oral law, which is contained in the Talmud. (q. v.)

Torbay; a bay in the English channel, on the east coast of Devonshire, and a celebrated rendezvous for the English navy. It is about twelve miles in compass, and is secure against westerly winds; but a south or south-east wind sometimes forces ships out to sea. Lon. 3° 28′ W.; lat. 50° 26′ N.; five miles north-east of Dartmouth.

Torch-Dance. Dancing and music were, even with the Greeks and Romans, essential to a well-ordered festival; and they were especially important at wedding feasts, which ended by conducting the bride to the house of the bridegroom, when a youth, who personated Hymen, preceded them with the wedding torch, and hymns were sung in honor of the god. The Romans, who had borrowed this ceremony from the Greeks, mingled with it their Fescennine games. This seems to have been the origin of the torch-dance, which was introduced by Constantine at his court, after it was transferred from Rome to Byzantium. It was known to the Christian emperors in the fourth century, as a court and ceremonial dance.

In later times, it was connected with the tournaments, with which emperors and kings celebrated their marriages. At the tournaments given by Henry the Fowler, the successful knight danced alone, with the lady who presented him with the reward of victory, by the light of torches, which were borne before and after them. After tournaments ceased to be celebrated, the torch-dance was revived as a relic of the chivalric ages; and it is used, in our times, at the marriages of royal personages, when it is performed with great splendor, at the conclusion of the wedding, when the married pair are conducted to their apartment.

Torch-Race. (See *Lampadephori.*)

Toreutics (from the Greek τορευτικη, the art of making work in relief) is sometimes used in a narrower sense, sometimes in a wider. Ernesti, in his *Archæologia literaria* (5th chap.), treats it as almost equivalent to plastics (q. v.) in general. He says the Greeks call τορευτον and γλυπτον that which is worked by the chisel. Winckelmann, on the other hand, says toreutics signified the art of making raised work in silver and bronze, while raised work in gems was called ἀναγλυφον. Eschenburg and Heyne understand by it castings; and, according to Schneider's Greek Lexicon, τορευω and τορευμα were applied only to raised work in metal, produced by casting, not by engraving. The later Greeks, as Pausanias, applied the term also to entire figures. Pliny understood by *toreutice*, statuary in bronze in general. Veltheim and others have considered the term as used, also, to express the finishing of casts by the chisel.

Torgau, an important fortress on the Elbe, in the government of Merseburg, Prussian province of Saxony, belonged to the kingdom of Saxony till 1815. It has 4000 inhabitants and 700 houses. Torgau has suffered much in various wars. Here Luther and his friends wrote his Articles of Torgau, the foundation of the Augsburg Confession; and the Book of Torgau, against Crypto-Calvinists, was signed here by more than eight thousand clergymen.

Tornea; a town of Finland, belonging, since 1809, to Russia, on a small island in the river Tornea, at its entrance into the north extremity of the gulf of Bothnia; lon. 24° 6′ E.; lat. 66° 51′ N.; population, 666. It is a central place for the imports and exports of a wild and thinly peopled country. The climate is less severe than might be expected in so high a latitude. In June, the sun is visible above the horizon at midnight. In 1736 and 1737, Tornea was visited by Maupertuis and other French *savans*, in company with the Swedish astronomer Celsius, to make observations to ascertain the exact figure of the earth.

Torpedo; a machine invented by Robert Fulton, and intended to blow up the largest ships. The principal part of the apparatus is a copper box, enclosing a certain quantity of gunpowder, and prepared with a spring which sets fire to the powder. The whole is enclosed in cork, or some light substance. It was intended to be placed under the keel of the vessel to be destroyed, by means of a harpoon directed against the side.

Torpedo; a well-known electrical fish. (See *Appendix*, end of this volume.)

Torpid State of Animals. (See *Dormant State.*)

Torquemada. (See *Inquisition.*)

Torre (in Italian, Spanish and Portuguese, *tower*) appears in many geographical and family names.

Torre del Greco; a town in Naples, five miles south-east of Capua, nine east-south-east of Naples; population, 16,766. It is situated on the sea-coast, at the foot of mount Vesuvius. The inhabitants are mostly employed in fishing, navigation, and the culture of the vine. This town was destroyed by an eruption of Vesuvius in 1794; yet the inhabitants, after the eruption, returned, and rebuilt the town on the same spot.

Torres Vedras, Lines of; so called from a small village lying on the road from Lisbon to Coimbra, twenty-four miles north-west of the former. These stupendous works, constructed by lord Wellington in 1810, consisted of two lines, the one extending from Alhandra, on the Tagus, to the mouth of the Zizandra, on the Atlantic ocean, twenty-nine miles in length, and the other, in the rear of the former, reaching from Quintella, on the Tagus, to the mouth of the Lorenza, on the ocean, twenty-four miles in extent, forming an impregnable barrier between the enemy and Lisbon. Fifty miles of fortifications, bristling with six hundred pieces of artillery, and one hundred and fifty forts, flanked with abattis and breast-works, and presenting, in some places, high hills artificially scarped, in others, deep and narrow passes carefully choked, and artificial pools or marshes made by damming up the streams, were defended by 70,000 disposable men. The French force under Masséna, which had been much superior to that of the English, before Wellington had concentrated in the lines the Portuguese troops and the marines, amounted, also, to about 70,000 men. The English were plentifully supplied with provisions, by the Tagus and the sea, and enjoyed perfect security in their rear. The French, on the other hand, were suffering from want, in a country where Wellington had laid waste and destroyed every thing which could be useful to an enemy, and were harassed by the attacks of the inhabitants. Massena was, therefore, finally obliged to retreat, by hunger (March 4, 1811), after having made some ineffectual attacks upon the works. The lines of Torres Vedras thus saved Lisbon, annihilated a well-appointed French army, and gave Wellington a fair opportunity to enter upon offensive operations.

Torricelli, Evangelista, an illustrious mathematician and philosopher, born at Faenza, in Italy, in 1608, was instructed in Greek and Latin by his uncle, a monk, probably with a view to his obtaining preferment in the church; but his genius induced him to devote himself to the study of mathematics, which he did for some time without a master; but at the age of twenty, he went to Rome, and prosecuted his studies under father Benedict Castelli. Torricelli, thus assisted, made great improvement, and, having read Galilei's Dialogues, composed a treatise concerning Motion, according to his principles. Castelli, astonished at the ability displayed in this piece, took it to Galilei at Florence, who conceived a high opinion of the author, and engaged him as his amanuensis. He entered on this office in October, 1641; but, Galilei dying three months after, Torricelli was about to return to Rome, when the grand duke of Tuscany, Ferdinand II, engaged him to continue at Florence, giving him the title of ducal mathematician, and the promise of a professorship in the university, on the first vacancy. Here he applied himself closely to study, and made many improvements and some discoveries in mathematics, physics, and astronomy. He improved the construction of microscopes and telescopes, and first ascertained the gravity of the air, by means of mercury in a glass tube, whence resulted the barometer. (See *Barometer*.) He was cut off prematurely, after a few days' illness, in 1647. He published, in 1644, a volume entitled *Opera Geometrica*; and his academical lectures were printed in 1715.

Torricellian Vacuum, and **Torricellian Tube**. (See *Barometer*, and *Torricelli*.)

Torrigiano, Pietro; a Florentine artist of great eminence, who flourished towards the close of the fifteenth and the commencement of the succeeding century. He was born in 1472, and, while yet a lad, gave evidence of that genius for sculpture which time only was wanting to bring to perfection. Being, at the time, a fellow-student with the famous Michael Angelo Buonaroti, a dispute, arising from a jealousy with respect to their comparative proficiency, terminated in blows; one of which, from the hand of Torrigiano, broke the bridge of his antagonist's nose, and inflicted a mark which he carried to his grave. While in the zenith of his reputation, he went to England, which he afterwards quitted for Spain, and there fell into the hands of the holy office, being denounced as guilty of impiety and sacrilege, in breaking to pieces a statue of the virgin, which he had himself executed for a hidalgo, who afterwards refused to pay him an adequate price. He was condemned to the stake, but avoided the torture of a public execution, by starving himself, previously to the celebration of the auto da fê, in 1522. The beautiful tomb of Henry VII, in the chapel erected by that monarch in Westminster abbey, is by him.

Torso (*Italian*) signifies originally the core of an apple, pear, &c.; secondly, the trunk of a statue, of which the head and the extremities are wanting. One has become particularly celebrated, and is often called *the torso*, by way of excellence. It is the *torso* of Hercules, in the Belvedere of the Vatican (q. v.), at Rome, considered, by connoisseurs, one of the finest works of art remaining from antiquity. "Mutilated in the greatest degree," says Winckelmann, in his History of Art, "without head, arms, and legs, as this statue is, it yet discloses to those who are able to penetrate the secrets of art, the splendor of its former beauty. The artist has formed, in this Hercules, a high ideal of a body of more than natural perfection, in the prime of adult age. The figure was, as we may judge from the remaining part, seated, with a supported and upturned head. This Hercules may be said to approach nearer to the noblest period of art than even the Apollo." A Greek inscription ascribes it to the artist Apollonius. It was found, towards the end of the 15th century, in Rome.

Torstenson, Leonard, a Swedish general, born at Torstena, in 1603, died at Stockholm, in 1651, was one of the most distinguished pupils of the school of Gustavus Adolphus. He served under that king, and under Baner, in the thirty years' war, and was made prisoner in the attack on Wallenstein's camp at Nuremberg, in 1632. He returned to Sweden in 1639, and, in 1641, on the death of Baner, was appointed to the command-in-chief of the Swedish forces in Germany. The position of the Swedish affairs was most discouraging; but the activity of Torstenson soon recovered them. He defeated the imperial forces at Schweidnitz (May 21, 1642), and, after being obliged to retreat before a superior force, at Breitenfeld (Nov. 2). A rupture having taken place between Denmark and Sweden, the Swedish commander hastened from Silesia to Holstein (a distance of 400 miles), by forced marches, and reduced nearly the whole of that province. This bold enterprise contributed to produce the peace of Bromsebro, between Denmark and Sweden, on terms highly advantageous to the latter. The imperial general Gallas, who had closely pursued the Swedes, was now obliged to retire to Bohemia, with great loss. Torstenson penetrated into that country, formed a junction with Rakotsky, prince of Transylvania, routed the imperial forces at Jankow, or Jankowitz (Feb. 24, 1645), and threatened Vienna. But the gout soon after compelled him to resign (1646), and retire to Sweden, where he was created count. Torstenson has left behind him the reputation of a great and successful general, and of a friend and patron of the arts and sciences. (See *Thirty Years' War.*)

Tort, in law, denotes injustice or injury. The word is French. Actions upon torts or wrongs are all personal actions for trespasses, nuisances, assaults, defamatory words, and the like.

Tortoise (*testudo*). These reptiles are distinguished by having the body enclosed between two shields or shells, so that the head, neck, legs, and tail, only appear externally; and these are capable of being retracted in a greater or less degree. The upper shell is formed by the ribs, which are enlarged, flattened, and closely united by sutures; the under shell is the sternum, or breast bone; and the vertebræ of the neck and tail only are movable. In consequence of this conformation, the muscular system is inverted, in many respects, as with insects and *crustacea*; and to this circumstance these animals owe their great strength. Tortoises have no teeth; and the margin of the mandibles is covered with horn, as in the beak of birds. They are very tenacious of life, and will move weeks after being deprived of the head; and this last will continue to bite long after it is severed from the body. They can remain months, and even years, without food. The eggs have a hard shell, and are deposited in the sand. The land tortoises are distinguished by the convexity of their upper shell, and their short toes, enveloped in the common integument, nearly to the nails. They pass their lives altogether upon land, and perish if thrown into the water. Some of them attain a very great size. The *gopher*, or large land tortoise of the U. States (*T. Carolina*), inhabits the pine forests of Georgia and Florida, and is not found north of the Savannah river. It digs large and deep holes, discoverable by the mound of earth at the orifice, and rarely ventures out, except at night. The shell exceeds a foot in length. The flesh is eatable, and is often sold in the markets. Our common land tortoise, or box tortoise (*testudo clausa*), is found in all parts of the U. States. It is remarkable for the hinge of the sternum, by means of which the animal can close the shell, in such a manner as to conceal perfectly every part of the body. The colors are yellow and brown, but the markings vary in different individuals. The shell does not exceed six inches in length. The fresh water tortoises (*emys*) have the upper shell more flattened, the nails longer, the toes more deeply divided, and their intervals occupied by a membrane, which assists the animal in swimming. We have numerous species in the U. States. The largest is the *E. Floridana* of Le Conte, which inhabits the St. John's river of East Florida. The shell of this species exceeds a foot in length, and is more convex than usual. The red-bellied terrapin (*E. rubriventris*, Lec.) is next in size. The shell is nearly a foot in length, and, more or less distinctly, longitudinally striated. The margin of the mandibles is usually worn away by use, and the bone presents a serrated or jagged edge. It inhabits the Delaware, Susquehanna, and Potomac, and is often brought to the Philadelphia market. The flesh is esteemed. *E. reticulata* is a southern species, hitherto not found north of the thirty-fifth parallel of latitude. It is remarkable for the extraordinary length of the neck. *E. serrata* is also a southern species, distinguished from the preceding by a carina or keel along the middle of the back. It is found as far north as the Chesapeake. *E. concinna* inhabits the upper and rocky parts of the rivers of Carolina and Georgia. The shell is perfectly smooth, but, in other respects, it bears a general resemblance to the red-bellied terrapin. *E. geographica* of Lesueur, so called from the pale, reticular or map-like lines on the back, inhabits the lakes and the western rivers. *E. insculpta* (Lec.) is found in the Northern and Middle States, but is rather rare. The back is carinate; the plates of the upper shell are concentrically furrowed, somewhat prominent, with radiating yellow lines. It differs somewhat in its aspect from the other fresh water tortoises; is observed to be more fond of leaving the water, and will remain for months uninjured in a dry place. *E. Muhlenbergii* is also rare. It is found in clear streams in New Jersey and Pennsylvania, and is readily distinguished by two large, irregular, orange spots on the back part of the head. The common terrapin (*E. palustris*) is well known in the Atlantic states south of New York, as an article of luxury. It is found exclusively in the salt water—a remarkable circumstance in this genus—and always in the neighborhood of marshes. It occurs along the coast, from New York to Florida, and even in the West Indies. The plates of the upper shell are concentrically furrowed. Immense quantities are brought to market. *E. picta* is found only in Canada and the Northern and Middle States. The shell is flattened and very smooth, and the plates are bordered with a yellow margin. It is fond of basking in the sun, upon rocks and logs, and instantly takes refuge in the water on the approach of danger. The common spotted tortoise (*E. guttata*) is found in all parts of the U. States. The color of the upper shell is black, with rounded yellow spots; the sternum is yellow, with large, dusky blotches. *E. Pennsylvanica* and *odorata* differ from the preceding in having the sternum divided into two or three pieces, by ligamentous hinges, admitting a slight degree of motion. They are of small size, of a brown color, or dusky, frequent ditches and muddy water, emit a strong and musky odor, and are very troublesome to anglers, as they bite readily at the hook. The snapper (*E. serpentina*) has been separated by some authors from *emys*, on account of the small size of the sternum, which serves very imperfectly to conceal the head and members. It is found from New England to Florida; prefers muddy waters, is very voracious, and destroys great quantities of fish. The shell is more or less tri-carinate; the head, neck, limbs and tail are very large, the latter strongly crested. From the form of its body, it is called, in the Southern States, *alligator tortoise*. It bites severely, and will seize any thing presented to it, and sometimes will not let go its hold even after the head is severed from the body. It is sought after as an article of food, but, when old, the flesh is rank and disagreeable, and, at all times, it exhales a strong, musky odor. It attains large dimensions: individuals have been met with exceeding four feet and a half in total length. The soft-shelled tortoises (*trionyx*) differ much in appearance from the preceding. The shell is covered with a soft, cartilaginous skin. The nose is prolonged into a snout. The feet are palmated, and provided with only three nails. The tail is short. They live in fresh waters; and the flexible border of the shell assists them in swimming. *T. ferox* is found in the lakes and the waters of the Mississippi, but not in the Atlantic states north of the Savannah river. The Mohawk river, however, should be excepted, into which these animals have found their way, probably from lake Ontario. Notwithstanding its name, it is not more inclined to bite than usual. Of all the tortoises, it furnishes the most wholesome and delicious food. It attains large dimensions, and is usually speared or shot. *T. muticus* of Lesueur strongly resembles the preceding, and, indeed, has not been very clearly distinguished. The only marked difference seems to consist in the perfectly smooth shell. It is found in the western rivers. The great soft shelled tortoise of Florida is known only from the figure of Bartram. The head and neck are described as being provided with long retractile tubercles, and the figure has five claws on each foot—if correct, a remarkable anomaly in this genus. There is, however, sufficient evidence of the existence of this animal. The sea tortoises (*chelonia*) far surpass the others in size, and are found chiefly within the tropics. The head and limbs are but slightly retractile, and the toes are entirely united and enveloped in the common integuments, forming a sort of flipper or paddle, as in the seals. They feed on sea-weed at the bottom, but, at a certain season, visit the shore, for the purpose of depositing their eggs in the sand. The green turtle (*C. mydas*) is well known for its delicious and wholesome flesh. It is imported pretty extensively from the West Indies. The *C. imbricata* furnishes the finest tortoise-shell of commerce, but the flesh is disagreeable. The coriaceous turtle (*C. coriacea*) differs in having the shell covered with a leathery skin, and three prominent ridges upon the back. It is taken, occasionally, on our coasts, as far north as cape Cod. It attains enormous dimensions, but is not applied to any useful purpose.

TORTOLA; one of the Virgin islands, near the island of Porto Rico, belonging to the English; eleven and a half miles long, and three and a half broad; lon. 64° 20′ W.; lat. 18° 20′ N. It was first settled by a party of Dutch bucaniers, who, in the year 1666, were driven out by others, who took possession in the name of the king of England, by whom they were protected; and Tortola was soon after annexed to the government of the Leeward islands. It has an unhealthy climate, and suffers much for want of water. The chief productions are sugar and cotton. The population, by the latest census, amounts to 7172, of which 477 are whites, 1296 free people of color, and 5399 slaves.

TORTURE (Latin, *quæstio*; French, *question*). The extortion of confessions from a suspected person, or of discoveries from a condemned criminal, has been common in all the nations of modern Europe. It was also practised by the ancient Romans, although only upon the bodies of slaves, until the servile period of the later empire (from the third and fourth centuries). In the provinces, however, where it had previously prevailed, as in the Oriental countries, in Macedonia, Rhodes, Athens, &c., it was retained by the provincial magistrates, even to the disregard of the persons of Roman citizens. Even the Roman civilians point out the absurdity of the practice, which could not extort truth from the stubborn, and might easily force the weak to obtain relief by falsehood. Beccaria, with exquisite irony, puts the problem, The force of the muscles, and the sensibility of the nerves, of an innocent person, being given, to find the degree of pain necessary to make him confess himself guilty. Some writers have distinguished between the application of torture, for purposes of discovery, and for purposes of evidence, maintaining the propriety of the former, while they acknowledge the folly and cruelty of the latter. The term *torture*, although improperly, is sometimes also employed to signify the torments to which condemned criminals are sentenced, as a part of their punishment, and not for the purpose of obtaining confessions; but, in all its applications, the practice of torture shocks every principle of reason, justice and humanity. Among the Romans, slaves were tortured, when their master was found murdered, for instance, by being stretched on a machine called *equuleus*; their arms and legs being tied to it with ropes, they were raised upright, and their limbs were stretched by means of screws; to increase the pain, pincers, fire, &c., were applied to them. The belief of the middle ages in the immediate interference of God for the protection of innocence and the exposure of guilt, which gave rise to the ordeal, and judicial combat, contributed much to extend the use of torture, by inculcating the notion, that Divine Providence would aid the innocent to endure pains which the guilty would be unable to sustain. The church, which, in other respects, gave a new form to the system of judicial process, set the example in this practice also; and, when the old superstitious means of discovering guilt (as by trial by fire and water) lost their efficacy, torture became general in Europe. It has been said, that in England torture was never practised; but this is a great error: for, though it is true, that the law never recognised the use of torture, yet there were many instances of its employment, as late as the reigns of Elizabeth and James, when prisoners were examined, to use the expressive words of an English writer, "before torture, in torture, between torture, and after torture;" and, notwithstanding the judges, when consulted by Charles I, as to the legality of putting Felton, the assassin of Buckingham, to the rack (1628), declared that the law of England did not allow the use of torture, instances of its application occur through the reign of that prince. In France, the *question préparatoire* was employed during the progress of the trial, to induce the accused to confess (but his endurance of the pain without confessing did not necessarily save him from condemnation), and the *question préalable*, to extort from a condemned criminal, previous to execution, the confession of his accomplices, or the disclosure of some circumstance which had not been explained or revealed on trial. In 1574, the count of Montgomery (q. v.) was subjected to the torture before his execution, although he had only been the innocent cause of the death of Henry II, by an accident at a tournament. Louis XVI abolished the *question préparatoire*, by a decree of Aug. 24, 1780; but the *question préalable* subsisted till the time of the revolution. In Germany, the incapacity of the criminal judges (ignorant baillies, burgomasters, &c.) could suggest to them, notwithstanding their official obligations, no better or shorter method of proceeding, than that of beginning every examination with torture, and terminating it by capital execution; and it was the great merit of the *carolina* (q. v.), that it established these two important principles of criminal jurisprudence, that no man should be punished without confession, or a direct and full proof, and that no man should be tortured without strong grounds of suspicion; and the opinion of learned jurists was required to be taken as to the sufficiency of these grounds. With these restrictions, torture continued to be practised in the German states till the close of the last century, and, in some of them, is at present rather disused than abolished. The mere threat of torture is termed *territion*, and is distinguished into *verbal territion*, in which the accused is given up to the executioner, who conducts him to the engines of torture, and describes, in the most appalling manner possible, the sufferings which he may endure, and the *real territion*, in which he is actually placed upon the machine, but is not subjected to torture. Thomasius, Beccaria, Voltaire, and Hommel, were the great promulgators of the better views which led to the abolition of torture. (See *Criminal Law*.) It is needless to say, that torture is not allowed in the U. States; the constitution provides, that no person in a criminal trial shall be compelled to be a witness against himself, and that no cruel or unusual punishment shall be inflicted.—The instruments of torture are very various; human ingenuity seems to have been exhausted in inventing the means of inflicting the most exquisite and prolonged sufferings. The following kinds of torture were chiefly employed in the Tower of London:—The *rack* is a large open frame of oak, under which the prisoner was laid on his back, upon the floor, with his wrists and ankles attached by cords to two rollers at the end of the frame. These rollers were moved by levers in opposite directions, till the body rose to a level with the frame; questions were then put, and, if the answers were not satisfactory, the sufferer was gradually stretched, till the bones started from the sockets. The rack is said to have been introduced into England by the duke of Exeter, under Henry VI, and is therefore familiarly called the *duke of Exeter's daughter*. The *scavenger's daughter* is a broad hoop of iron, consisting of two parts, fastened together by a hinge. The prisoner was made to kneel on the pavement, and contract himself into as small a compass as possible. The executioner, kneeling on his shoulders, and having introduced the hoop under his legs, compressed the victim close together, till he was able to fasten the extremities over the small of the back. The time allotted to this kind of torture was an hour and a half, during which the blood commonly started, by force of the compression, from the nostrils, and sometimes from the hands and feet. *Iron gauntlets*, which could be contracted by a screw, were used to compress the wrists, and to suspend the prisoner in the air, from two distant points of a beam. He was placed on three pieces of wood, piled one on the other, which were successively withdrawn from under his feet, after his hands had been made fast. The *little ease* was a fourth kind of machine, made of so small dimensions, and so constructed, that the prisoner confined within it could neither stand, walk, sit, or lie at full length, but was compelled to draw himself up in a squatting posture, and so to remain several days. Besides these, there were manacles, thumb screws, Spanish boots, &c. Several degrees of torture are distinguished. In France there were two, the *question ordinaire*, and *extraordinaire*; and in Germany, we find mention of the first, second and third degree.

TORY. The following account of the origin of the use of this term, as a party name, so distinguished in the political history of England, is given by a contemporary whig, Defoe (q. v.), in his Review (vol. vii), published in 1711:—"The word *tory* is Irish, and was first used in Ireland at the time of queen Elizabeth's war, to signify a robber who preyed upon the country. In the Irish massacre (1641), you had them in great numbers, assisting in every thing that was bloody and villanous: they were such as chose to butcher brothers and sisters, fathers and mothers, the dearest friends, and nearest relations. In England, about 1680, a party of men appeared among us, who, though pretended Protestants, yet applied themselves to the ruin of their country. They began with ridiculing the popish plot, and encouraging the Papists to revive it. They pursued their designs in banishing the duke of Monmouth, and calling home the duke of York (see *James II*); then in abhorring, petitioning and opposing the bill of exclusion; in giving up charters and the liberties of their country to the arbitrary will of their prince; then in murdering patriots, persecuting dissenters, and at last in setting up a popish prince on pretence of hereditary right, and tyranny on pretence of passive obedience. These men began to show themselves so like the Irish thieves and murderers aforesaid, that they quickly got the name of *tories*. Their real god-father was Titus Oates. On account of some one saying, at a meeting of honest people of the city, upon the occasion of the discovery of an attempt to stifle the evidence of the witnesses [to the popish plot], that he had letters from Ireland, that there were some tories to be brought over hither to murder Oates and Bedloe, the doctor [Oates] could never after this hear any man talk against the plot or witnesses (see *Popish Plot*) but he thought he was one of these tories, and called almost every one a tory that opposed him in discourse; till at last the word *tory* became popular, and it stuck so close to the party, in all their bloody proceedings, that they had no way to get it off. So at last they owned it, just as they do now the name of *highflyer*." (For the origin of the term *whig*, and the history of the two parties, see the article *Whig*.) The Irish word *tory* is derived from *toruighim* (to pursue for purposes of violence); and the country was for a long time so much harassed by the depredations of the tories (or *rapperees*, as they were also called) that a price of £200 was set on their heads by Cromwell.

Totality designates the character of a thing as one whole (consisting in the harmony of all its parts), or the body of all beings of one genus, contradistinguished to singularity and plurality. *Totality* is particularly used in reference to works of art, which ought to contain all those relations and ideas which are necessary to the complete expression of the artist's conceptions. (See *Kant*.)

Totila, king of the Ostrogoths in Italy, succeeded to the throne in 541, having previously distinguished himself in the war against the Romans. The confusion among the Goths at this period induced the Romans to make an attempt upon their capital, Verona; but Totila repeatedly defeated them, marched through Italy, and formed the blockade of Naples, which was obliged to surrender, and, having reduced the provinces of Lucania, Apulia, and Calabria, led his army to the neighborhood of Rome, and posted himself at Tivoli, within eighteen miles from the capital. Justinian now recalled Belisarius from the Persian war, and sent him to its relief; but he was unable, from disparity of force, to meet the Goths in the field, and Rome fell into the possession of Totila. He indulged his Goths with free liberty of pillage, and then sent an embassy to Justinian to proffer a treaty of amity, which being rejected, he proceeded to the demolition of the city, and had destroyed a third part, when he was induced by Belisarius to desist. On quitting it, however, to march to Lucania, he carried the senators along with him; and Belisarius and his small army soon after occupied the vacant city, and began to repair the fortifications and recall the inhabitants. Upon intelligence of this event, Totila returned, and made a furious assault, in which he was repulsed with great loss; and symptoms of disobedience began to appear in his army. Having received a reinforcement, however, he made a second attempt, and, by the treachery of some Isaurian guards, was enabled to reënter Rome. On this occasion, he restored the senators to their honors, and the inhabitants to their possessions, and repaired many of the walls and buildings which he had formerly demolished. He then made proposals to Justinian a second time, which were not even listened to, and, passing over to Sicily, made himself master of that island, as also those of Sardinia and Corsica. His troops were, in the mean time, besieging Ancona; but, a naval force being sent to its relief, the siege was raised, and the recovery of Sicily soon after followed. At length Justinian recalled Belisarius, and despatched a powerful army under Narses, which advanced directly towards Rome. Totila met him in the neighborhood of that capital. A furious battle ensued, in which the Goths were entirely defeated; and their leader quitted the field with five companions. Being overtaken by a party of Gepidæ, their commander, not knowing him, ran a lance through his body. With him expired (A. D. 552) the revived glory of the Goths in Italy. His character is commended, by the historians of the time, for valor, tempered by humanity and moderation, and justice.

Tott, Francis, baron de, a Hungarian nobleman, was born in France, where his father was employed as a public agent, in 1733. In 1755, he accompanied Vergennes, the French ambassador, to Constantinople, and, after seven years residence there, during which time he learnt the Turkish language, was appointed French consul in the Crimea. After remaining there several years, he withdrew to Constantinople, and obtained the favor of the grand seignior, by preparing a map of the theatre of war between Turkey and Russia, introducing improvements into the cannon founderies, &c. Peace following in 1774, he returned to France, and was employed to inspect the consular offices in the Levant. At the breaking out of the revolution, he was commander of Douai; and, being obliged to flee, on account of his anti-republican principles, he retired to Hungary, where he died in 1793. His interesting *Mémoires sur les Turcs et les Tartares* (1784, 4 vols., 8vo.) have been translated into English and several other European languages.

Toucan (*ramphastos*). These birds, so remarkable for the enormous size of the beak, are found exclusively in the tropical parts of America. The species are numerous, and, in their size, correspond to the raven, crow and jay. The colors of the plumage are brilliant; but black predominates, especially on the upper parts. The beak is also varied with the most beautiful tints during life; but they disappear in the stuffed specimen, unless prepared in a particular manner. The feet are short and strong, provided with two toes before and two behind; the wings short and concave; the bill is long, compressed, curved downwards towards the extremity, and has the margin of the mandibles serrated: it makes a formidable appearance, but is extremely light, weak, and of a cellular consistence. The tongue is long and slender, and remarkable for its resemblance to a feather. The toucans live in small communities, composed of six or eight individuals, and frequent the summits of the highest trees. They are continually in motion, but do not climb, notwithstanding the conformation of their feet. They feed on fruits, especially bananas, insects, and even young birds. They throw their food into the air before swallowing, in order to seize it more favorably. They nestle in hollow trees, and lay two eggs.

Touch. (See *Feeling.*)

Toulon; a seaport of France, department of the Var, on a bay of the Mediterranean, thirty miles south-east of Marseilles, and 220 south of Lyons; lon. 5° 56′ E.; lat. 43° 7′ N.; population, 30,171. It is built at the foot of a ridge of mountains which shelter it from the north, is surrounded with ramparts, ditches and bastions, and defended by a citadel and a number of forts and batteries. It consists of two parts, the old and new towns; the former ill built, but the latter in a better style, containing the principal public structures, and several straight streets. The chief public buildings in Toulon are the hotel de Ville, the hotel de l'Intendance, eight churches and three hospitals. The environs yield vines, figs, and other products of a warm climate. Toulon has long been one of the chief stations of the French navy, being on the Mediterranean what Brest is on the Atlantic. It has two ports, the old and new, communicating with each other by a canal. The old or commercial port is a basin, commodious, but not large. The new or military port is one of the finest in Europe, and is said to be capable of containing 200 sail of the line. The arsenal, situated along the side of the new port, is a very large edifice, well filled with arms and naval stores. Here are docks for ship-building, store houses for timber, manufactures for canvass, cordage, anchors, &c. The trade of Toulon is not extensive, being limited to the products of the vicinity, such as wine, oil, silk and fruit. In 1707, the town was bombarded by the allies, under the duke of Savoy and prince Eugene, by land, and by the English and Dutch fleets by sea, and nearly destroyed, but the assailants were obliged to raise the siege. It was occupied by the British troops in 1793; but, being besieged by the French troops under Bonaparte, the British abandoned it (Dec. 19) after burning and carrying off about half of the squadron contained in the port. The bagnio (q. v.) of Toulon is capable of receiving more than 4000 convicts sentenced to the galleys. (q. v.)

Toulouse; a city of France, capital of Upper Garonne, formerly capital of Upper Languedoc, on the Garonne, near the junction of the canal of Languedoc; lon. 1° 27′ E.; lat. 43° 36′ N.; population, 55,319. The buildings are almost all of brick: the walls enclose a space larger than any other city in France; but there is much vacant ground. Some of the streets are tolerably broad; others are winding and irregular. There is a fine bridge over the Garonne, 810 feet long. It is an archbishop's see, and contains a cathedral, forty Catholic churches, one

Reformed church, two hospitals, a mint, a royal college, a provincial university or academy, an observatory, a museum, a public library, and a *capitole*, or town-house. The situation of Toulouse is advantageous; but the commerce and manufactures are inconsiderable. Toulouse is an ancient town: in the sixth century, it was the capital of the Visigoths (see *Goths*), and afterwards became the residence of the counts of Toulouse, till the union of Languedoc with France. In 1814, Soult was defeated here by Wellington, and the town was taken by the English (April 11). The archbishop of Toulouse, minister of Louis XVI, was Loménie de Brienne. (q. v.)

Tour and Taxis. (See *Thurn and Taxis.*)

Touraine; before the revolution, a province of France, bounded north by Maine, east by Orleannais, south by Berry and Poitou, and west by Anjou. It is about sixty miles in length, and fifty-four in breadth. The river Loire runs through it, and divides it into Higher and Lower Touraine. Tours was the capital. (See *Department.*)

Tourmaline; one of the most interesting species in the mineral kingdom, on account of the forms of its crystals, its various and rich colors, its electrical properties, and its chemical composition. The general form of its crystals is a prism of three, six or more sides, variously terminated at one or both extremities; when at both, the two terminations being dissimilar. The primary form is an obtuse rhomboid of 133° 50′; and the secondary crystals, or occurring forms, may be conceived of by supposing the lateral solid angles deeply truncated, so as to extinguish the lateral edges, and convert the rhomboid into a prism with trihedral terminations. This prism is sometimes eight or ten times longer than thick; instead of six sides, it often has twelve, or a much greater number, and rarely becomes, through the multiplication of lateral faces, nearly cylindrical. The trihedral summits have their apices truncated also, and their edges variously bevelled; cleavage is rarely visible, and cannot be determined with certainty; fracture imperfect conchoidal, or uneven. The sides of the prism are deeply striated longitudinally: the terminal faces are generally smooth. Lustre vitreous; color brown, green, blue, red, white, frequently black, generally dark; streak white; transparent to opaque; less transparent, if viewed in a direction parallel to the axis, than perpendicular to it, and generally presents different colors in these directions; hardness a little above that of quartz; specific gravity 3.07. Besides the crystals, tourmaline is found massive, the composition being usually columnar; individuals of various sizes, thin, straight, parallel or divergent. Tourmaline and schorl, which were once distinguished as two particular species, differ only in their colors and transparency. The varieties of green, blue, red, brown and white color, and such in general as are not perfectly black, were included under tourmaline; while the black and opaque ones constituted schorl. The red variety is sometimes called *rubellite*, and the blue one, *indicolite*. The composition of the species is as follows:—

	Red Variety.	*Blue.*	*Green.*	*Black.*
Alumine,	36.43	40.50	39.00	33.24
Silex,	42.12	40.30	40.00	38.92
Boracic acid,	5.74	1.10	00.00	0.60
Oxide of iron,	0.00	4.85	12.50	7.20
Oxide of manganese	6.32	1.50	2.00	0.00
Potash,	2.45	0.00	0.00	2.53
Lithia,	2.04	4.30	0.00	0.00
Lime,	1.20	0.00	3.84	0.00
Magnesia,	0.00	0.00	0.00	9.80
Water and loss,	1.31	3.60	0.00	0.03
	By C. G. Gmelin.	By Arfvedson.	By Vauquelin.	By C. G. Gmelin.

Those which contain lithia intumesce before the blow-pipe, and assume a slaggy appearance, but do not melt; those which contain soda intumesce still more, but likewise do not melt, except on the edges; those containing lime intumesce very much, and melt into a white slag. Long crystals of tourmaline assume, by heat, opposite kinds of electricity at their opposite extremities; and transparent pieces which have been cut and polished are electrical at common temperatures without friction or pressure. Tourmaline is a very abundant mineral in granitic rocks, occurring imbedded in them in larger or smaller masses, sometimes occupying drusy cavities of considerable extent. It exists also in beds with augite, garnet and various iron ores. It is also met with in pebbles in the sand of rivers. In Saxony, Cornwall and other countries, massive varieties of tourmaline are very frequent; but simple, well-defined crystals are rare. The largest and most remarkable crystals of a black color occur in Greenland, in Bavaria, and near Bovey in Devonshire. The red varieties are found in Permia, in Siberia, and at Rozena in Moravia. Pale-green crystals occur in the dolomite of St. Gothard, and various transparent, deep-green, red, brown and blue colors are found among the crystals and pebbles from Brazil and Ceylon. Blue varieties also come from Utön in Sweden. The U. States, however, have afforded, and still continue to afford, the most superb varieties of tourmaline. Large, black and well-defined crystals occur in the granite of Saratoga, New York; of Brunswick, Maine; and Munroe, Connecticut: very perfect blackish-brown crystals, of unusual dimensions, and under great diversity of modification, are found in a soft mica slate at Munroe, Connecticut; red, green and blue varieties, of bright colors, and often transparent, exist in albite granite at Chesterfield and Goshen, Massachusetts; while the same colored varieties, but in much larger crystals, occur at Paris in Maine. The last-named locality has furnished specimens which are unsurpassed in beauty by any which have been elsewhere found. Tourmaline, when of a handsome color and transparent, is much esteemed as a gem. The rubellite, or red varieties, command the highest price; next to them, the green ones, formerly called *Brazilian emerald*, are the most valuable; but they are less esteemed than real emeralds. Plates of brown tourmaline, if cut parallel to the axis, absorb one of the polarized pencils, which renders them useful in the examination of the structure of minerals in polarized light.

TOURNAMENT, and **JOUSTS**. "Impartial taste," says Gibbon, "must prefer a Gothic tournament to the Olympic games of classic antiquity. Instead of the naked spectacles, which corrupted the manners of the Greeks, the pompous decoration of the lists was crowned with the presence of chaste and high-born beauty, from whose hands the conqueror received the prize of his dexterity and courage. The skill and strength that were exerted in wrestling and boxing, bear a distant and doubtful relation to the merit of a soldier; but the tournaments, as they were invented in France, and eagerly adopted both in the East and West, presented a lively image of the business of the field. The single combat, the general skirmish, the defence of a pass or castle, were rehearsed as in actual service; and the contest, both in real and mimic war, was decided by the superior management of the horse and lance." (ch. 57.) The origin of tournaments is uncertain: Von Hammer, with others, derives them from the Arabians; but all historical monuments tend to show their Teutonic origin. They reached their full perfection in France in the ninth and tenth centuries, and first received the form under which they are known to us from the French. The word *tournament* is also evidently of French origin (*tournois*, from *tourner*); and the German, Italian, &c. terms for this exhibition betray the same source. Godfrey de Preuilly, a French nobleman, first collected the rules of tourneying, in 1066, which, in the twelfth and thirteenth centuries, we find to have been received in other countries. The opinion that tournaments originated in Germany, is without foundation: Sebastian Münster asserts that the first great tourney in Germany was held at Magdeburg in 1066. Tournaments were introduced into England soon after the conquest by the Normans, who were passionately fond of this amusement. Jousts (French *joûte*) differed from tournaments in being single combats between two knights, while tournaments were performed between two parties of cavaliers. Jousts were of two sorts—the *joûte a l'outrance*, or the joust to the utterance, or mortal combats, generally between two knights of different nations; and the *joûte à plaisance*, or joust of peace, which often took place after the conclusion of a tournament, but sometimes at times and places specially appointed for the purpose. Weapons of war were frequently used, even in this latter species of jousts; but blood was seldom shed in them. A favorite description of jousts was the *passage of arms;* a party of knights assembled at a certain place, and suspended each several shields of different colors, offering to combat any knight who should present himself. The comer touched the shield of that knight whom he wished to engage, and the nature of the combat and descriptions of arms to be employed were determined by the particular shield which he struck.

But the tournament was the most popular and splendid of these exhibitions: in these, blunted weapons were used, and heralds were often despatched to different courts, inviting all brave knights to prove their chivalry. Certain qualifications of birth were required for admission to the tourney, and their respective hostels, or tents, were assigned to the knights by the king at arms and heralds. The place of combat was the lists, a large open space, surrounded by ropes or a railing. Galleries were erected around the lists for the spectators, among whom were seated the ladies, the supreme judges of tournaments. The heralds then read to the knights the regulations of the sport, and announced the prize. When the knights entered the lists, their arms were examined by the constable: the weapons used were lances, with the points removed, or covered with pieces of wood called *rockets*, and swords, blunted and rebated. The tilting armor was of a light fabric, and generally adorned with some device of a lady's favor. Every thing being prepared, the heralds shouted, *Laissez aller!* and the knights dashed from the opposite ends of the lists to the encounter. Each knight was followed by his squires, who furnished him with arms, raised him if dismounted, &c. To break a spear between the saddle and the helmet, was accounted one point of honor; to break it on the helmet, ten points; to dismount an opponent, three points, &c. (See the *Ordinances, Statutes and Rules to be observed in Justes, &c.*, drawn up by the earl of Worcester, by the royal command, in the *Antiquarian Repertory.*) The sport being over, the prizes were delivered to the successful knights by the queen of beauty, who had been chosen by the ladies. On the second day, there was often a tournament for the esquires; and on the third, a *mêlée* of knights and esquires in the lists. The great luxury and expense to which the tournaments gave rise, frequently occasioned the prohibition of them by princes; and they were opposed also by the spiritual power, on the ground of humanity, though there appears to have been little cause for such opposition. They gradually went out of use, however, as chivalry declined; and the whole art of war was changed by the use of gunpowder. In France, the death of Henry II, who was accidentally killed, at a tournament, by count Montgomery (q. v.), in 1559, contributed to hasten their abolition; and they were little practised after the sixteenth century. Tournaments were succeeded by the *carrousel*, in which several parties of knights executed various evolutions, and mock combats, and other shows were exhibited.—See Mills's *History of Chivalry*, ch. vi, on Tournaments and Jousts; and Ferrario, *Romanzi di Cavalleria*, diss. v.; *Sui Tornei, sulle Giostre*, &c. (Milan, 1828).

Tournay, or **Doornick**; a city of Belgium, in Hainaut (q. v.), on the Scheldt, three posts east of Lille, and thirty-one north of Paris; lon. 3° 23' E.; lat. 50° 36' N.; population, 33,000. It is a bishop's see, has a citadel, a cathedral, twelve parish churches, seventeen convents, and five hospitals. It formerly had a university, now converted into a lyceum. On the side of the Scheldt is a broad, handsome quay, the only embellishment of the town, which is, in general, ill built and gloomy. It has manufactures of woollen and cotton stuffs, was formerly strongly fortified, and had one of the finest citadels in Europe, which was levelled by the French in the middle of the eighteenth century. It was anciently the capital of the Nervii, and was the residence of some of the Frankish kings of the first dynasty. This city has often been taken in the wars between the French, English and Flemings.

Tournefort, Joseph Pitton de, an eminent French botanist, born at Aix, in Provence, in 1656, was educated at the Jesuits' college in that city. His passion for botany disclosed itself at an early age, so that in a short time he had made himself acquainted with all the plants in the vicinity. Though destined for the church, he continued his botanical researches by stealth; and, encouraged by an uncle, who was an eminent physician, applied to the study of anatomy and chemistry. In 1677, being left, by the death of his father, to pursue his own inclinations, he determined to adopt the medical profession, and for that purpose repaired, in 1679, to Montpellier. In 1683, he was appointed professor of botany to the garden of plants at Paris, and soon after visited Spain, Portugal, England and Holland. In 1691, he was elected a member of the academy of sciences, and, in 1694, published his first work, entitled *Elémens de Botanique* (3 vols., 8vo., with numerous plates). The method established by Tournefort was founded upon the varieties of the petals of flowers, taken in conjunction with the fruit. It became rapidly popular by its facility and elegance, although imperfections were pointed out in it by Ray. In 1696, he was admitted a doctor of the faculty of Paris, and composed the History of Plants in the Neighborhood of Paris (first edition, 1698; reprinted by Jussieu in 1725, in 2 vols.; an English translation was given by professor Martyn, in 1732). In 1700, he gave a Latin version of his Elements of Botany, with many valuable additions, and a learned preface, under the title of *Institutiones Rei Herbariæ* (3 vols., 4to.). In the same year, he received an order from the king to travel into the Levant, for the purpose of examining the plants mentioned by writers of antiquity, and accordingly visited Greece and its islands, and Asia Minor as far as the frontiers of Persia. He returned to France by way of Smyrna, in 1702; and the first botanical fruits of his travels appeared the following year, in a supplement to his Elements of Botany. He died in 1708, leaving his cabinet of curiosities to the king for public use, and his botanical books to the abbé Bignon. The first volume of his travels was printed at the Louvre before his death, and the second being completed from his manuscripts, both were published in 1717, with the title of *Rélation d'un Voyage du Levant* (2 vols., 4to.). Of this work, which stands high among books of the class, there have been several editions, and it has been translated into English.

Tourniquet; an instrument employed in the practice of surgery to stop bleeding. It can, however, only be applied to the limbs, and its use is only intended to be temporary.

Tournois, Livre. (See *Livre.*)

Tours; a city of France, capital of Indre-and-Loire, on the Loire; 140 miles south-west of Paris; lon. 41′ E.; lat. 47° 24′ N.; population, 20,920. It is situated in a delightful plain, in one of the finest parts of France, the surrounding country being remarkably beautiful. It is an archiepiscopal see, and contains a cathedral, remarkable for its lofty spire, and library (30,000 vols.), fourteen churches, three hospitals, a botanic garden, and a museum. The houses are generally low, and the most of the streets are narrow and gloomy. But the *Rue neuve*, or *royale*, is a street of great elegance, the houses béing built of stone, on a uniform plan. The bridge over the Loire, 1400 feet long and 45 wide, consists of fourteen arches. The approach to the town is remarkably fine, the avenues being bordered with rows of trees. The principal manufacture is that of silk, which formerly employed in the town and neighborhood 20,000 people; but at present not more than one third of that number. Tours was formerly more populous than at present. Before the revolution it was the capital of Touraine. In 732, the Saracens were defeated, by Charles Martel, near this town, with the loss of 10,000 men.

Toussaint-Louverture, the celebrated black chieftain, was born a slave, in the year 1745, upon the plantation of count de Noé, situated near cape Français, now cape Haytien. His amiable deportment as a slave, the patience, mildness and benevolence of his disposition, and the purity of his conduct amid the general laxity of morals which prevailed in the island, gained for him many of those advantages which afterwards gave him such absolute ascendency over his insurgent brethren. His good qualities attracted the attention of M. Bayou de Libertas, the agent on the estate, who taught him reading, writing, and arithmetic—elements of knowledge which hardly one in ten thousand of his fellow slaves possessed. M. Bayou made him his postilion, which gave him advantages much above those of the field-slaves. When the general rising of the blacks took place, in 1791, much solicitation was used to induce Toussaint to join them; but he declined, until he had procured an opportunity for the escape of M. Bayou and his family to Baltimore, shipping a considerable quantity of sugar for the supply of their immediate wants. In his subsequent prosperity, he availed himself of every occasion to give them new marks of his gratitude. Having thus provided security for his benefactors, he joined a corps of blacks, under the orders of general Biassou, in the capacity of his lieutenant; but was soon raised to the principal command, Biassou being degraded on account of his cruelty and ferocity. Indeed, Toussaint was every way so much superior to the other negroes, by reason of his general intelligence and education, his prudence, activity, and address, not less than his bravery, that he immediately attained a complete ascendency over all the black chieftains. Thus it happened that, in June, 1794, when the English, under general Whyte, captured Port au Prince from the French commissioners Santhonax and Polverel, the latter, on retiring into the country, found the whole island in the possession of Rigaud, at the head of the mulattoes, and Toussaint-Louverture; with his negroes. They contended with various success against the English, until 1797, when Toussaint received from the French government a commission of general-in-chief of the armies of St. Domingo, and, as such, signed the convention with general Maitland for the evacuation of the island by the British. From 1798 until 1801, the island continued peaceable and tranquil under the government of Toussaint, who adopted and enforced the most judicious measures for healing the wounds of his country, and restoring its commercial and agricultural prosperity. His efforts would have been attended with much success, but for the ill-judged expedition which Bonaparte sent against the island, under the command of Le Clerc. This expedition, fruitless as it was in respect of its general object, proved fatal to Toussaint, solely in consequence of the sincerity and good faith which marked his character. Toussaint was noted for private virtues; among the rest, warm affection for his family. Le Clerc brought out from France Toussaint's two sons, with their preceptor, Coisnon, whose orders were to carry his pupils to Toussaint, and make use of them to work on the tenderness of the negro chief, and induce him to abandon his countrymen. If he yielded, he was to be made second in command to Le Clerc; if he refused, his children were to be reserved as hostages of his fidelity to the French. Notwithstanding the greatness of the sacrifice demanded of him, Toussaint remained faithful to his brethren. We pass over the details of the war, which, at length, ended in a treaty of peace concluded by the black chief Toussaint, Dessalines and Christophe, against their better judgment, but in consequence of the effect of Le Clerc's professions upon their simple followers, who were induced to lay down their arms. Toussaint retired to his plantation, relying upon the solemn assurances of Le Clerc, that his person and property should be held sacred. But, notwithstanding these assurances, he was treacherously seized in the night, hurried on board a ship of war, and transported to Brest. He was conducted, first to close prison in Chateaux de Joux, and from thence to Besançon, where he was plunged into a cold, wet, subterranean prison, which soon proved fatal to a constitution used only to the warm skies and free air of the West Indies. He languished through the winter of 1802—1803; and his death, which happened in April, 1803, raised a cry of indignation against the government which had chosen this dastardly method of destroying one of the best and bravest men of the negro race.—See Malo, *Histoire de Haiti*, published 1825, p. 181—255); also the article *Hayti*.

Tower of London. This ancient edifice is situated on the north bank of the Thames, at the extremity of the city. The antiquity of the building has been a subject of much inquiry; but the present fortress is generally believed to have been built by William I, and garrisoned with Normans, to secure the allegiance of his subjects; although it appears, that the Romans had a fort on this spot. The Tower is governed by the constable of the Tower, who, at coronations and other state ceremonies, has the custody of the regalia. The principal entrance on the west consists of two gates on the outside of the ditch, a stone bridge over it, and a gate within it. The keys are kept during the day at the warder's hall, but deposited every night at the governor's house. The Tower is separated from the Thames by a platform, and by part of the ditch. The ditch, of considerable width and depth, proceeds northwards on each side of the fortress, nearly in a parallel line, and meets in a semicircle; the slope is faced with brick, and the great wall of the Tower has been frequently repaired with that material. Cannon are planted at intervals round the line, and command every avenue leading to Tower hill. The space enclosed by the walls measures twelve acres five roods, and the circumference on the outside of the ditch is 3156 feet. On the south side of the Tower is an arch called the *traitor's gate*, through which state-prisoners were formerly brought from the river. Near the traitor's gate is the *bloody tower*, in which it is supposed the two young princes, Edward V, and his brother, were smothered by order of Richard III. In the south-east angle of the enclosure were the royal apartments; for the Tower was a palace for nearly 500 years, and only ceased to be so on the accession of queen Elizabeth. The principal buildings within the walls are the church, the white tower, the ordnance office, the old mint, the record office, the jewel office, the horse armory, the grand storehouse,—in which is the small armory,—the lion's tower, containing the menagerie, and the Beauchamp tower. The church called *St. Peter in Vinculis*, is remarkable as the depository of the headless bodies of numerous illustrious personages who suffered either in the Tower or on the hill; amongst these are Fisher, Anna Boleyn, Thomas Cromwell, Catharine Howard, the duke of Somerset, and the duke of Monmouth (1685). The white tower, a large, square, irregular building, erected in 1070, consists of three stories. On the first story are the sea armory, consisting of muskets for the sea-service, and other warlike implements of every description, and the volunteer armory, for 30,000 men. Within the white tower is the ancient chapel of St. John, originally used by the English monarchs, which now forms a part of the record office. South of the white tower is the modelling room, in which are models of Gibraltar and other places; but no strangers are admitted. The parade near the white tower is much frequented as a promenade. The office of the keeper of the records contains the rolls from the time of king John to the beginning of the reign of Richard III. Those since that period are kept at the Rolls chapel, Chancery lane. The price of a search is 10s. 6d., for which you may pursue one subject a year. The jewel office is a strong stone room, in which are kept the crown jewels, or regalia. The imperial crown, and the other emblems of royalty, such as the golden orb, the golden sceptre and its cross, the sceptre with the dove, St. Edward's staff, state salt-cellar, curtana or sword of mercy, golden spurs, armilla or bracelets, ampulla or golden eagle, and the golden spoon, also the silver font used at the baptism of the royal family, the state crown worn by his majesty in parliament, and a large collection of ancient plate, are kept here. The horse armory is a brick building, east of the white tower, adorned with suits of armor of almost every description; but the most striking are the effigies of the English kings on horseback, armed cap-à-pie. The line commences with William the Conqueror, and extends to George II. Several of the cuirasses and helmets taken at Waterloo are also kept here. The grand storehouse, north of the white tower, about 345 feet in length and 60 in breadth, is composed of brick and stone, was begun by James II, and finished by William III. The upper story is occupied by the small armory, containing arms for about 200,000 men, all kept bright and clean, and numerous historical curiosities. The Spanish armory is principally occupied by the trophies taken from the Spanish armada, such as thumb-screws, battle-axes, boarding-pikes, &c. Here also are shown a representation of queen Elizabeth in armor; the axe which severed the head of Anna Boleyn, as well as that of the earl of Essex; the invincible banner taken from the Spanish armada; a wooden cannon used by Henry VIII, at the siege of Boulogne, &c. The Beauchamp tower is noted for the illustrious personages formerly confined within its walls. Amongst them were the ill-fated Anna Boleyn and the accomplished lady Jane Grey. The former is said to have written her memorable letter to Henry VIII in the apartment called the *mess-house*. The lion's tower, built by Edward IV, was originally called the *bulwark*, but received its present name from being occupied as the menagerie. It is situated on the right of the inner entrance to the Tower; but the animals kept here are not numerous.—See Bayley's *History of the Tower* (2 vols., 4to., 1821), and Britton and Brayley's *Memoirs of the Tower* (1 vol., 12mo., 1830).

Townley, Charles, a gentleman of large fortune, which he employed in the collection of antiquities, was born at Townley hall, in Lancashire, in 1737. The religious opinions of his family preventing his receiving a university education in England, he was sent to the continent; and a residence at Rome enabled him to form a museum, replete with valuable manuscripts, specimens of the finest sculpture, medals, vases, urns and other relics of ancient art. These he transported, eventually, to England, and bequeathed to the British museum. (See *Terra Cotta.*) His death took place January 3, 1805.

Towns. We have already given an account of the rise and growth of towns in modern Europe, and of their moral and political influence upon society, in the articles *City*, and *Community*. (See these articles, and also *Hanse Towns*, and *Free Cities.*) In a general sense, *town*, in England, is a walled place, or borough, and comprehends the several species of cities, boroughs (q. v.), and common towns or villages; but, in a narrower sense, it is restricted to the latter class of places, a city being a place which is or has been a bishop's see, and a borough a place which sends members to parliament. In the U. States, where the different states are divided into counties (with the exception of South Carolina and Louisiana, in the former of which the divisions are termed *districts*, and in the latter, *parishes*), the word *town* has a somewhat different signification. In the New England and Middle States (with the exception of Delaware), and in Ohio, the counties are subdivided into townships, which, at least in many of the states, are improperly styled *towns*, while by *cities* is commonly meant those places which are incorporated with certain peculiar municipal powers. In the New England states, the townships differ much in extent, varying from five to six miles square. They are incorporated by the legislatures of the states with certain rights, and a distinct police, conducted by officers chosen annually by the inhabitants. Some of the principal officers are a town-clerk, selectmen, assessors of taxes, overseers of the poor, school committee, &c. The townships in the New England states, and in New York, are subdivided into school districts of a convenient size, in which free schools are maintained at least a part of every year. The money necessary for the support of the schools and the poor, for the repair of roads, &c., is raised in each town by vote of the inhabitants. Each of these towns thus constitutes a little democracy, in which the affairs of the community are managed by the people themselves in their town-meetings.

Towton; a village of England, in Yorkshire, three miles south-east of Tadcaster. A sanguinary battle was fought here, between the forces of the houses of York and Lancaster, in 1461, in which the latter were completely defeated. (See *Edward IV.*)

Toxicology (from τοξικὸν, properly the poison which the ancients put upon arrows and spears); the science of poisons and antidotes. The works of Frank and Orfila are distinguished in this branch, also Buchner's and Witting's. (See *Poisons.*)

Tracheotomy, or Bronchotomy (from *trachea*, or βρογχος, the windpipe, and τεμνω, to cut); also Laryngotomy (from λαρυγξ, the larynx, and τεμνω). This is an operation in which an opening is made into the larynx, or windpipe, either for the purpose of making a passage for the air into and out of the lungs, when any disease prevents the patient from breathing through the mouth and nostrils, or of extracting foreign bodies, which have accidentally fallen into the windpipe; or, lastly, in order to be able to inflate the lungs, in cases of sudden suffocation, drowning, &c. Its practicableness, and little danger, are founded on the facility with which certain wounds of the windpipe, even of the most complicated kind, have been healed, without leaving any ill effects whatever, and on the nature of the parts cut, which are not furnished with any vessel of consequence.

Trackshuyt. (See *Treckshuyt.*)

Tractors, Metallic. (See *Perkins.*)

Trade of the World. (See *Commerce of the World.*)

Trade-Winds (so called from their favoring commerce); easterly winds which constantly prevail, with slight variations, in certain regions within the tropics. It is a common notion, that the north-east trade-wind blows exactly from the north-east point nearly to the equator, when it gradually becomes more and more easterly, till at length it blows due east; and so with the south-east trade. This notion is, however, erroneous. The trade-winds, in the Atlantic and Pacific oceans, extend to about 28° of latitude each side of the equator; so that a ship, after passing 30°, may expect to enter them every day. But, on first entering them, they will be found to blow from the east, or even a little southerly, and, as you advance, to draw round gradually to north-east, and even north, at the southern limit of the north-east trade, where it is commonly represented as being due east. This limit varies with the position of the sun, reaching, when the sun has a southern declination, to within three or four degrees north latitude, and, as the sun acquires a more northern declination, receding ten or twelve degrees from the equator. At this point, the mariner enters the region of *calms* and *variables*, as they are called, where the wind has a more or less southerly direction, and sometimes blows freshly from the south-south-west. This region varies from 150 to 550 miles, and is subject to heavy rains. On passing this range, the south-east trade begins, and displays the same phenomena as the north-east. To the north and south of the north-east and south-east trades, westerly winds will be found generally to prevail, though less regular in the northern than in the southern hemisphere; and it has been remarked that the average of the passages made by the Liverpool packets from New York out, for a period of six years, was twenty-three days, and from Liverpool to New York, that is, from east to west, thirty-eight days.

Tradition, in its general application, is any knowledge handed down from one generation to another by oral communication. This is the shape in which history appears before the art of writing is invented or introduced; and the later this takes place, the farther back does tradition extend, till it loses itself in mythology. Any person who has noticed the manner in which facts are distorted, even at the present day, if not protected against gradual change and misrepresentation by unquestionable documents, although the sources of correct information have been so greatly increased, will easily understand why historical tradition is to be received with the utmost caution. Every person, every country, every age, involuntarily gives a coloring to facts, to say nothing of intentional misstatements. But there is a species of historical tradition which exists even after the invention not only of writing, but of printing. It is the repetition of hearsay, by which misrepresentations of facts, or downright inventions, creep into notice, and soon become widely repeated and believed, either because they suit the purposes of a party, or because they are presented with an air of credibility. How many stories, believed for centuries, have at last been proved utterly false! how many are yet in the mouths of millions, and, nevertheless, untrue! It becomes the historian, therefore, to examine into the origin of every statement, and the character and situation of those on whose authority it rests: did they know with certainty what they relate? were they not actuated by interest, passion or prejudice? The same caution which the historian must observe in regard to traditions, politicians and citizens of a free government ought to exercise in regard to those party rumors which we might term *political traditions*. Without such caution, a free people becomes the tools of demagogues. Every statement in print receives, from this very circumstance, a kind of authority; and what has not been said in print? Newspapers (q. v.), much as they contribute to general information, also contribute much to the propagation of these unfounded reports. The counterstatements of opposite papers serve, indeed, in some measure, to correct each other's misrepresentations; but, as the mass of people read only the papers of their own party, misstatements will inevitably gain a footing; and a man who is desirous of believing only the truth, must subject the stories admitted on hearsay by his party to a critical scrutiny. It was long believed that a female was raised to the papal chair, under the name of *John VIII* (see *Joan the Papess*); and how many persons have credited the newspaper stories that Napoleon used to beat his wife, and had criminal intercourse with his daughter-in-law! The story of the beating is, in fact, still repeated in some histories of Napoleon, so called! It is a very common mistake to ascribe to the statements of ancient writers full credibility, though the writer may have lived in a time or country so distant from that to which his narrative relates, that he had no better opportunity of judging than ourselves. (See Niebuhr's *Roman History*.)—Tradition, in another sense, forms one of the chief points of disagreement between the Roman Catholics and Protestants, perhaps the most important. The Catholic understands by tradition the unwritten word of God, that is, sacred truths orally communicated by Jesus and the apostles, which were not written down, but, by the assistance of the Holy Ghost, were preserved in the church from one generation of bishops to another. The chief sources of it are considered to be the fathers of the church, who, indeed, introduced rites not prescribed by the Bible, and some of which, as the baptism of children, confession, the celebration of certain festivals, &c., have been retained by many Protestant sects, yet with different views from those entertained by the Catholics respecting their importance, or necessity for salvation. The Catholics ascribe to their tradition divine authority, and thus make it a principle in their dogmatics. They maintain that the church has always remained in possession of the revelation of the Holy Ghost, which the apostles enjoyed, and that this revelation or belief of the church is ascertained by the decrees of the councils (q. v.), the concurrence of the fathers of the church, and the decrees of the popes (the Gallican church, however, does not give this authority to the decrees of the pope, unless they are acquiesced in by the church universal, though it admits that this acquiescence may be tacit). The Bible, indeed, is adopted as a rule of faith by the Catholics as well as by the Protestants; but the former consider it as to be explained and understood according to the construction which the church puts upon the doctrines contained in it—a principle sanctioned by the council of Trent. A reverence for tradition, therefore, is taught in all Catholic catechisms; and it is the foundation on which the Catholic believes in his rites, and the characteristic parts of his religious worship. In the *Canones et Decreta Concilii Tridentini, Appendix, p. xxii*, we find in pope Pius's creed the following passage: *Apostolicas et ecclesiasticas traditiones, reliquæque ejusdem ecclesiæ observationes et constitutiones firmissime admitto et amplector*

Item, sacram scripturam juxta eum sensum, quem tenuit et tenet sancta mater eccle-

sia, cujus est judicare de vero sensu et interpretatione sacrarum scripturarum, admitto; nec eam unquam, nisi juxta unanimem consensum patrum accipiam, et interpretabor. The council of Trent ascribes equal authority to tradition and the Bible. It has been said, indeed, that it ought to have given greater authority to the former, as the latter can only, by the council's own decree, be legitimately explained by the church or traditions. From all that has been said, it appears that tradition is to the Catholic what reason is to the rationalist, and the literal text of the Bible, scientifically and conscientiously settled, to the supernaturalist. (See *Roman Catholic Church*.)

Traditores; a name given, in the first ages of the church, to those Christians who, during the persecutions, especially those under Diocletian, gave up the sacred books and utensils to the heathen authorities, to escape the dangers which threatened them. They were generally timorous priests, and were punished by the church with dismissal from office. The Donatists (q. v.) considered the Traditores on a level with the worst heretics, and separated from the Catholic church on the ground that it tolerated them. (See *Donatists*.)

Traducians (from *traduco*, to transmit); a name which the Pelagians anciently gave to the Catholics, because of their teaching that original sin was transmitted from father to children. At present, the term is sometimes applied to those who hold that souls are transmitted to children by the parents.

Trafalgar, Battle of. (See *Navy*, where it is fully described.)

Tragedy (from the Greek and Latin *tragœdia*). The Greek word is derived from τραγος, and ᾠδη, a song. It is an old, but not, therefore, less absurd opinion, says Adelung, in his *Wörterbuch*, that the first part of the word τραγος signifies, in this composition, a he goat, and the whole, a song in honor of Bacchus, sung at the sacrifice of a he goat, or a play, for which the poet received a he goat—a derivation occasioned by its being generally known that τραγος signifies a *he goat*, while it is not so commonly known that it also signifies *melancholy*, of which the Latin *tragicus* is a clear proof; otherwise that word would have signified *goatish*. Hesychius explains εκτραγωδει, explicitly, by αποιμωζει, αποθρηνει, he weeps. In the ancient Upper German, the word *Trego* signifies grief; in Lower Saxon, *träge* is weary, sad; and in Swedish, *träga* means to mourn, and *träge*, grief; all of which are connected with the Greek τραγικος, or τραγος. Tragedy, therefore, properly signifies a melancholy song, as comedy signifies a gay one. But that τραγος, in Greek, signifies both a he goat and melancholy, is as accidental as that *ram*, in English, means a male sheep, and also to drive down. So far Mr. Adelung. The invention of tragedy, in its first rude form, is ascribed to Thespis, who lived in the time of Solon. According to Herodotus, the people of Sicyon introduced tragic choruses before the times of Thespis, first in honor of Bacchus, then of Adrastus; to them, therefore, the invention of the Greek tragedy is generally ascribed; its developement is due to Æschylus. As Aristotle found it, he described it as a dramatic poem, which has for its object to purify by terror and pity, awakened by the poetical imitation of an action. To understand this oft-repeated explanation, we must examine the meaning of purifying passions by means of passions. The artificial production of those passions which affect us disagreeably, cannot well have any effect in purifying the soul, except by strengthening the mind, and exercising it in governing the passions in general. For such a purpose, indeed, a state of mind seems proper, in which man feels at the same time the influence of strong emotions, and the power to free himself from their influence at pleasure. Into this state tragedy strives to bring us. It aims to awaken in us those passions which rest on sympathy (and which, therefore, impede our inward freedom less than the purely selfish ones), by an artificial appearance, by truth of conception without reality of action, and whilst it does not hide the want of reality, it leaves us the feeling of ability to free ourselves from the influence of the scene at pleasure, even if it were only by the consciousness that the whole is but appearance. Who could calmly witness the performance of a tragedy if he really thought, but for a moment, the sufferings represented on the stage were real? The poet strives to operate upon us by the liveliness of his creations, and thus to arouse within us those powers which counteract the passions. As the exercise of these powers is the object in view, he must avoid carrying the sympathetic emotion so far, that we can escape the pain only by a complete destruction of the illusion; because, as soon as we take this means, that exercise of the moral faculty ceases. We must be able to suffer the conception of being in the situation of the actors, even when we see them perish, by feeling in ourselves the existence of those powers, of which they, for the moment, seem to be deprived. From this point of view, the definition of Aristotle is perhaps to be reconciled with what has been said, in modern times, on the essence of tragedy. Even dramatic writers have confounded the melancholy with the tragic; but it may be deduced from what has been said, that the essence of tragedy does not depend on the melancholy end, on the tears extorted, but on the greatness and elevation of the chief idea contained in the fable, and which it illustrates, as by a living example. Whilst we pity the suffering depicted, we must be able to delight in the nobleness of its cause, as, otherwise, no feeling is excited in us but a purely painful one, from which we can only escape by the idea that the whole spectacle is an illusion. Many theories have been started to explain what is properly the tragical in tragedy, some very obscure, others less so; as that the tragical is founded on the struggle of human freedom with necessity, of the will with fate, &c. But the comic, the true comic, is, in many cases, nothing else. This struggle belongs to the drama in general. (See *Drama.*)

Trajan. M. Ulpius Trajanus, a Roman emperor, born in Italica, in the Spanish province of Bætica, was the son of Trajanus, a distinguished Roman commander, under Vespasian. He accompanied his father in a campaign against the Parthians, and also served on the Rhine, where he acquired so high a character, that when the excellent and aged Nerva came to the throne, he adopted him, and raised him to the rank of Cæsar, in 97, being then in his forty-second, or, according to some, in his forty-fifth year, and of a most dignified appearance and commanding aspect. His elevation immediately curbed the insolence of the pretorian guards; and Nerva dying a few months after, he peaceably succeeded to the throne. He was at that time in Germany, where he remained for more than a year, to settle a peace with the German states, and, in 99, set out with a numerous escort to Rome. After a liberal largess to the soldiers and people, he took measures for supplying the capital with corn; in which he was eminently successful. He then proceeded to punish and banish the pernicious tribe of informers, and to reduce some of the most odious of the taxes, and showed the most praiseworthy solicitude to fill the most important posts with men of talent and integrity. Like Augustus, he cultivated personal friendships, and visited his intimates at their houses with entire confidence, and as a private person. His palace was open to his friends and to all who chose to enter it, and his audiences were free to all the citizens. At his table were always some of the most respectable Romans, who indulged in the ease of mixed conversation. Although his early military experience had prevented him from acquiring the accomplishments of learning, he was sensible of its importance, and founded libraries; and under his patronage, the studies were revived which had suffered from the persecution of Domitian. His virtues procured for him, by the unanimous voice of the senate, the title of Optimus. In the third year of his reign, he accepted of a third consulship; and during his possession of this magistracy, the celebrated panegyric upon him was pronounced by Pliny, which is still extant. In the following year, a war broke out with Decebalus, king of the Dacians, whom he subdued. He then returned to Rome, and enjoyed the honors of a triumph, with the name of Dacicus. The two following years he passed at Rome, and in the last of them, 103, Pliny was made governor of Pontus and Bithynia, which circumstance gave rise to a series of official letters between him and Trajan, which, beyond any rhetorical panegyric, afford proof of the liberal spirit of the government. Among these are the famous epistles respecting the Christians, whom he directs Pliny not to search for, but to punish if brought before him; and on no account to listen to anonymous charges. In 104, Decebalus renewed the war with the Romans, which immediately called out the warlike emperor, who, with a view to form a road for his troops, constructed a bridge over the Danube, which was deemed one of the greatest works of antiquity. He then marched into Dacia, and reduced the capital of Decebalus, who, in despair, killed himself; and Dacia became a Roman province. His passion for war—the only fault which can be charged on Trajan as a sovereign—exhibits him, for the remainder of his reign, rather as a victorious commander, engaged in distant expeditions for the enlargement of the empire, than as a sovereign ruler. The disposal of the crown of Armenia led, in the first instance, to a contest with Chosroes the Parthian, of which war the reduction of Armenia to a Roman province was the result. The succeeding Eastern campaigns of Trajan, and the renewal of the war with Parthia, cannot be detailed in summaries of this nature. The year 114 is said to be that in which he dedicated the magnificent forum which he built in Rome, and erected the column sculptured with his exploits, which still remains under his name. In a final campaign in the East, after giving a king to the Parthians, he laid siege to Atra, the capital of an Arabian tribe, but was obliged to withdraw to Syria. In the following year, 117, he proposed returning into Mesopotamia, but was attacked by a paralytic disorder, attended by a dropsy, which induced him to repair to Italy, leaving the army under the command of Adrian. He had proceeded no farther than Selinus, in Cilicia, when he died. The empress Plotina took advantage of his last moments to secure the adoption of Adrian for his successor, not without some suspicion of a gross deception. Trajan died in his sixty-fourth year, after a reign of nearly twenty years. As a sovereign, the only blemish in his character was his great passion for war, the extension of empire produced by which —the greatest that ever acknowledged Roman sway—scarcely lasted longer than his own lifetime. In his private character he was said to be addicted to sensual indulgences, of which a passion for wine was by far the least disgraceful. His good qualities as a ruler, however, were such that, at the distance of two hundred and fifty years from his death, the senators, in their acclamations on the accession of a new emperor, were accustomed to wish that he might be more fortunate than Augustus and better than Trajan.

Trajan's Column. (See *Column.*)

Tramontana. The Italians give this name to the north wind, because it comes to them over the Alps, and for a similar reason, they call the north or polar star *stella tramontana.* This gave rise to the saying *perder la tramontana*—applied to one who loses his way—a metaphor taken from mariners, who are guided in their course by the pole-star. The phrase has even passed from the Italians to the French (*perdre la tramontane*), and the Germans (*die Tramontane verlieren*), though, in its original signification, it has no application to France and Germany.

Trance; an ecstasy, a state in which the voluntary functions of the body are suspended, and the soul seems to be rapt into visions. (For the state of apparent death, which sometimes takes place to such a degree as to have led to the interment of people under the supposition that death had actually taken place, see *Asphyxia*, and *Death;* and for the means of restoring suspended animation, see *Drowning*.)

Tranquebar; a seaport of the Carnatic, in Tanjore, 56 miles south of Pondicherry; lon. 79° 54′ E.; lat. 11° 1′ N.; population, 15,000. It belongs to the Danes, having been purchased by them in 1616, and is the seat of a governor, and the capital of the Danish possessions in India. (See *East India Companies.*) It is situated on the coast of Coromandel, with a harbor at the mouth of one of the branches of the Cauvery, defended by a fortress. The town is between two and three miles in circumference, and surrounded with a wall and several bastions, well provided with artillery. Within the walls are three Christian churches, one Lutheran, one missionary, and one for Roman Catholics (descendants of Portuguese who were in possession of the town before it was possessed by the Danes), a large mosque for the Mohammedans, and five pagodas for the Hindoos. The fort called Daneborg is kept in neat order. The territory belonging to the town is considerable (425 square miles, population, 50,000), and is full of populous villages.

Transcendent and **Transcendental** are technical terms in philosophy. According to their etymology (from *transcendere*), they signify that which goes beyond a certain limit; in philosophy, that which goes beyond, or transcends, the circle of experience, or of what is perceptible by the senses. Properly speaking, all philosophy is in this sense transcendental, because all philosophical investigations rise above the sensual, even if they start from that which is perceptible by the senses. But philosophical inquiries are to be distinguished according as they proceed from experience, or from principles and ideas not derived from that source. The latter sort are called, in a narrower sense, *pure*, or *transcendental.* The school of Kant makes a still further distinction: it gives the name of *transcendental* to that which does not indeed originate from experience, but yet is connected with it, because it contains the grounds of the possibility of experience; but the term *transcendent* it applies to that which cannot be connected with experience, but transcends the limit of possible experience and of philosophizing. The *transcendent*, therefore, is properly opposed to the *immanent*. *Immanent* principles are those the application of which is confined entirely within the limits of possible experience. "I call all knowledge *transcendental*," says Kant, in the Critique of pure Reason, "which occupies itself not so much with objects as with the way of knowing these objects, as far as this is possible *a priori*. A system of such notions would be called *transcendental philosophy*, and would be the system of all the principles of pure reason;" or, as he says in another passage, "the philosophy of the pure, merely speculative reason, from which the practical is separated." Accordingly, metaphysics, in particular, has received the name of *transcendental philosophy*. But, in another passage, he distinguishes the metaphysical from the transcendental. The former presents notions as obtained *a priori;* the latter explains the principles from which the possibility of other synthetic knowledge can be understood *a priori*.—In mathematics, *transcendental* or *transcendent lines*, are those curves the nature of which cannot be explained by algebraic equations. Descartes called them *mechanical lines*, and refused them a place in mathematics; but Leibnitz received them again, inventing a peculiar kind of equations, by which their nature is as well explained as that of algebraic curves.

Transept. (See *Architecture*, vol. i, p. 343.)

Transferring. The following is the mode of transferring lithographic prints or copperplate engravings from paper to wood. The print is first placed in a vessel of water, until it is completely saturated, which will be about five or ten minutes, and then placed between blotting paper, to remove the superabundant water from its surface. It is then varnished by a brush, and applied immediately to the wood, which has been previously varnished, and allowed to dry. The print thus applied may be subjected to the pressure necessary to effect its complete adhesion, by spreading over it a sheet of paper, and rubbing this with the hand. The paper on which the print was made may then be peeled off by rubbing it cautiously with the moistened fingers, and, when wholly removed, a coat of varnish must be applied to the print. When colored prints are to be transferred, an acid solution must be used instead of water, to destroy the size which exists in the paper. This solution may be composed of two thirds of vinegar and one third of water, and is to be applied only to the back of the print. If the article is to be polished, apply several coats of varnish, allowing each to dry before the application of another; and then rub the surface with a piece of woollen cloth and pumice stone reduced to impalpable powder. When the surface becomes smooth, the process may be continued with a fine cloth and the finest tripoli, with olive-oil.

Transfiguration, in the language of the church; the glorification of Christ on mount Tabor, in memory of which the Roman Catholic church celebrates a feast of the first rank on Aug. 6, which seems to have been established as late as the twelfth century. Pope Calixtus III, in 1456, attached to this many indulgences, in memory of a victory gained over the Turks. One of the most beautiful pictures of Raphael is known under this name. It is in the Vatican. Dorigny and Morghen have given fine engravings of it.

Transfusion (*transfusio*, from *transfundo*, to pour from one vessel into another); the transmission of blood from one living animal to another. Harvey was thirty years before he could get his discovery admitted; but, as soon as the circulation was acknowledged, people's minds were seized with a sort of delirium: it was thought that the means of curing all diseases was found, and even of rendering man immortal. The cause of all our evils was attributed to the blood: in order to cure them, nothing more was necessary but to remove the bad blood, and to replace it by pure blood, drawn from a sound animal. The first attempts were made upon animals, with complete success. A dog, having lost a great part of its blood, received, by transfusion, that of a sheep, and became well. Another dog, old and deaf, regained, by this means, the use of hearing, and seemed to recover its youth. A horse of twenty-six years, having received in his veins the blood of four lambs, recovered his strength. Transfusion was soon attempted upon man. Denys and Emerez, the one a physician, the other a surgeon of Paris, were the first who ventured to try it. They introduced into the veins of a young man, an idiot, the blood of a calf, in greater quantity than that which had been drawn from them, and he appeared to recover his reason. A leprous person, and a quartan ague, were also cured by this means; and several other transfusions were made upon healthy persons without any disagreeable result. However, some sad events happened to calm the general enthusiasm caused by these repeated successes. The young idiot we mentioned fell into a state of madness a short time after the experiment. He was submitted a second time to the transfusion, and was immediately seized with a *hæmaturia*, and died in a state of sleepiness and torpor. A young prince of the blood royal was also the victim of it. The parliament of Paris prohibited transfusion. A short time after, G. Riva having, in Italy, performed the transfusion upon two individuals, who died of it, the pope prohibited it also. From this period, transfusion has been regarded as useless, and even dangerous.

Transit, in astronomy. By a transit over the disk of the sun, we understand the phenomenon which occurs when Venus or Mercury, in their revolution round the sun, pass between the sun and the eye of the observer on this earth, and appear to move like black spots over the sun's disk, their illuminated portion being the side turned from the spectator. If this phenomenon is observed by different persons at points considerably distant from each other, it will not be of equal duration at all of these points; and, as the differences of time depend on the parallax (q. v.) of the planet as well as the sun, the former will enable us to determine the latter. The transits of Venus are particularly suited to this purpose. Such a transit of Venus over the sun's disk, accompanied with very favorable circumstances, occurred last, June 3, 1769, and forms an epoch in the history of astronomy. The royal society of London had it observed at Hudson's bay and Otaheite; the French court, by Chappe, in California; the Danish, by Hell, at Wardhus, in Lapland; the Swedish, by Planmann, at Kajaneborg, in Finland; and, by these five observations, the sun's parallax, which is one of the most important elements of astronomy, was determined with great exactness. The next transits of Venus fall in the years 1872 and 1884.—See the ninth book of Lalande's *Astronomy*; the *Mémoire sur le Passage de Vénus* (Paris, 1772, 4to.); Bode's *Abhandlung vom Durchgang der Venus* (Hamburg, 1769). A good general view of the subject may be found in Lalande's *Abrégé d'Astronomie* (Paris, 1795, p. 264 seq.).

Transit Trade; such as arises from the passage of goods through one country on their way to another. It is sometimes of great importance, as, for instance, when most of the commodities of the East which were consumed in the north of Europe passed through Germany. The transit trade leaves the commission, and other expenses attending the forwarding of the goods, in the country through which they pass; besides which they sometimes also pay a duty.

Transition Formations. (See *Geology*.)

Transmigration of the Soul. The doctrine of the passage of the soul from one body into another has its foundation in the belief of the connexion of all living beings, and of the gradual purification of the spiritual part of man, and its return to the common source and origin of all things—God. The earthly life, according to this system, is only a point in the succession of states through which the soul, proceeding from God, has to pass, in order, at last, to return to its original source. Even some modern European writers have inclined to the doctrine of transmigration, as enabling the soul in one condition to supply the deficiencies of another, and to fit itself better for a more perfect state. Pious and reflecting men, for example, Herder, have thought that many reasons were to be found for a belief in such a transmigration, which is also taught in the Talmud. Faint images of divine magnificence once witnessed in a higher state, and revived in the soul, by the view of the true, the good and the beautiful, which are met with in this life, and which fill the spirit with admiration and delight, are thought to be presentiments of those feelings which will again be awakened in us, when we return to the original source of all truth, goodness and beauty. The religion of the ancient people of India, in which the first traces of a belief in a transmigration of the soul are found, considers it partly as the course of destiny, partly as a punishment for the neglect of religious duties, in consequence of which the soul is made to pass, after death, through the bodies of various animals, by way of penance and purification. With this doctrine is connected the regard which the Indians have for animals. From the Indians, this belief passed into the secret doctrine of the Egyptian caste of priests, who believed that the soul had to continue 3000 years, after death, in the bodies of animals, before it could reach the habitations of the blessed. From them the Greeks received the doctrine, and termed it *metempsychosis* (change of soul), and *metensomatosis* (change of body). (See *Metempsychosis*.) Pythagoras (q. v.) adopted it into his philosophy, as indicating the immortality of the human soul. The later Pythagoreans taught that the mind, freed from the fetters of the body, will enter the realm of the departed, there remain in an intermediate state for a longer or shorter time, and again animate other human or animal bodies, until the time of its purification is finished, and its return to the Fountain of life has become possible. The mind of Pythagoras himself was conceived to have been already four times on earth. The stories of these Pythagorean notions rest on comparatively late reports. The Greek mysteries enveloped the doctrine of the transmigration of the soul in agreeable mythuses, which represent Dionysos or Bacchus as the lord and leader of the soul. In these, also, the belief in a pre-existence is to be discovered. For this esoteric doctrine distinguishes souls, which, according to the organization of the universe, are driven from their former ethereal or heavenly life down to the earth, to appear for the first time as men, from the souls in a state of penance, which were obliged to enter a human body a second and third time; and also from those souls which voluntarily come to the earth from curiosity, or delight in individuality. The Greek poets and philosophers have given various forms to these mythuses. Pindar, the Pythagorean, lets the soul arrive at the isles of the blessed after passing three unblemished lives on this earth. Plato extends the period for the entire return of souls into the Godhead to 10,000 years, during which they have to abide in the bodies of animals and men. Plotinus treats of two kinds of transmigrations, a passage of souls from invisible, ethereal bodies into earthly ones, and from earthly into other earthly bodies. Among the Romans, Cicero and Virgil have alluded to this doctrine. The rabbins treat the subject of transmigration in their peculiar way, maintaining that God created but a certain number of Jewish souls, which therefore constantly return on earth as long as Jews are to be found here, and are sometimes made to dwell in the bodies of animals for the sake of penance, but, at the day of the resurrection, will all be purified, and in the bodies of the just revive on the soil of the promised land.—The Christian sect of the Manichæans (q. v.) also considered the transmigration of the soul as a means of penance. This belief was widely diffused. It existed among the ancient Italians, the Celtic Druids, the Scythians and Hyperboreans, and is still entertained by the heathen nations of Eastern Asia, the Caucasian tribes, the American savages, and African negroes. With the ancient Egyptians, it led, as it still does with the Hindoos, to the veneration of certain animals, and the fear of eating their flesh, since their bodies may be the abode of departed ancestors or friends. The Pythagoreans would not kill animals, for the same reason. This belief in the transmigration of the soul, as a means of purification and penance, may have been attended with good consequences in certain states of society; but the Christian is content to leave undrawn the veil which the Creator has placed over the particular circumstances of our future condition. Whatever may be the means for purifying and perfecting the human soul after death, the Christian rests assured that a life passed according to the commands of God will fit the soul to enjoy his presence; and that a life passed in the neglect of his commands will lead to future misery.

Transoms; certain beams or timbers extended across the sternpost of a ship, to fortify her after-part, and give it the figure most suitable to the service for which she is calculated.

Transparency; the property of bodies by which they admit the passage of light through them. It does not consist, however, simply in transmitting light in sufficient quantity, but in transmitting it in straight lines. Water and oil, for instance, are each separately transparent substances, but, mixed together, are untransparent, because they refract light differently. On the other hand, paper, which by itself is opaque, becomes transparent by moistening it with water or oil. The transparency of a body has no connexion with its hardness or softness, or porosity, as one would at first imagine. The hard diamond is transparent: the softest kinds of wood, on the contrary, are not so, because the rectilinear direction of the rays of light in the mass does not depend on the properties just mentioned. The unchangeableness of this rectilinear direction of the rays of light must therefore be regarded as the proper fundamental cause of transparency. Newton, in his Optics, has proposed acute inquiries and conjectures respecting transparency in the sense just given. Bouguet, in his *Traité d'Optique* (Paris, 1760, 4to.), has given the results of his experiments on the diminution which the light suffers in its passage through different bodies. The newly-invented photometer of Lampadius depends upon this principle of the diminution of light by transparent bodies. It is a tube in which plates of the transparent substances are inserted, till the light at last becomes invisible through it. (See a *Practical Treatise on Gas Light*, by Accum.)

Transportation is a kind of punishment, or more properly an alleviation or commutation of punishment, for criminals in England convicted of felony; who, for the first offence, unless it is an extraordinary one, are generally transported to New Holland or Van Diemen's Land, there to bear hard labor for a term of years.

Transubstantiation. (See *Lord's Supper.*)

Transylvania; a grand principality, forming part of the Hungarian estates of the imperial house of Austria, lying between Hungary, Walachia and Moldavia; 23,500 square miles; population, 2,000,000. It is called by the Germans *Siebenbürgen*, from Siebengebirge (q. v.), whence a colony of German colonists removed to the former region in 1143. The Latin name *Transylvania* is derived from its situation beyond the Carpathian forests; and the Hungarian name *Erdely* signifies the *mountainous forest*. Transylvania is surrounded on the east, south, and partly on the north, by the Carpathian mountains, from which lateral chains branch off, and cross the country in every direction. It consists chiefly of alternate mountains and valleys, with few extensive plains. The principal rivers are the Maros, Samos and Aluta. The lakes are deep. The soil is generally fertile, but badly cultivated; the climate cold for the latitude, but healthy. The productions are wheat, oats, barley, potatoes; maize and vines are raised in favorable situations; orchards are not neglected; hay, and all artificial grasses, are unknown, and cattle subsist upon natural herbage; cattle and sheep are numerous; there are extensive forests. The mineral productions are various. There are salt mines producing annually from 30 to 40,000 tons; iron mines, yielding 3000 or 4000 tons of iron; mines of lead, copper, silver and gold; quarries of marble, jasper, porphyry, slate, limestone, coal, sulphur and petroleum, precious stones, as topazes, chrysolites, opals, garnets, &c.; and mineral springs in abundance. Transylvania is a part of the ancient Dacia. (q. v.) From the fifth century downward, it was successively occupied by different nations; and, in 1004, it was made a province of Hungary. John Zapolya, in 1535, was acknowledged by the king of Hungary sovereign prince of Transylvania; and he and his successors were often supported by the Turks against the Hungarian princes of the Austrian dynasty. Leopold I finally conquered the country, in 1689; and, by the peace of Carlovitza (q. v.), in 1699, the sovereignty of Austria over Transylvania was acknowledged by Turkey. The country, however, continued to be governed by its own princes, until the extinction of their line, in 1713, when it was incorporated with Hungary. Maria Theresa erected it into a grand principality in 1765. The population is composed of thirteen nations. The three principal people are the Hungarians, Szecklers (supposed to be descendants of the Petshenegurs) and Saxons (the German colonists above mentioned). The country is accordingly divided into three main divisions: 1. the Land of the Szecklers, in the east, thinly peopled, and subdivided into three seats or jurisdictions; 2. the Land of the Hungarians, in the west, which comprises half of the population and extent of the country, and is divided into eleven counties (*comitatus*) and two districts; 3. the Land of the Saxons in the south and north, which is the best cultivated, and is divided into nine seats or jurisdictions and two districts. These three nations are called the *United* (*Uniti*); the others, called the *Tolerated* (*Tolerati*), are Walachians, Armenians, Greeks, Moravians, Poles, Russians, Bulgarians, Servians or Rascians, Jews and gipsies. The last mentioned, called also *Pharaohs*, and *New Peasants*, lead a roving life, and cannot be induced to cultivate the land in a stationary place of residence. The Walachians are the most numerous of the *Tolerati*. Trade is chiefly in the hands of Greeks and Armenians. The Saxons are the most industrious part of the population, and in their *Land* lie Hermannstadt, the capital, with 16,000 inhabitants, and Cronstadt, the principal commercial and manufacturing place in Transylvania, with 30,000 inhabitants. The Transylvanian nobility enjoy exemption from taxes, and from the county jurisdiction, and other privileges. The higher nobility, barons and counts, are styled *magnates*. The lower nobility are not altogether exempt from taxes: this class includes those nobles who have no manor, the citizens of the free cities, and the officers of the chase to the sovereign. The rest of the people consists of the citizens of the other towns, emancipated peasants and serfs. The Transylvanian estates are divided, in regard to nations, into the Hungarian, Szeckler and

Saxon benches; in respect of religion, into the Catholic, Reformed (Calvinistic), Evangelical (Lutheran), and Unitarian or Socinian benches; and, in regard to character, into those of the prelates, of the magnates, and of the nobles. The diets are held in Hermannstadt. The estates have the right, in connexion with the crown, to make laws, impose taxes, and confer the rights of citizenship on foreigners. The revenue of the principality amounts to 5,000,000 guilders. The four religions above mentioned are privileged; others are only tolerated. (See *Military District*.)

Trapezoid, or **Trapezium**; a quadrilateral figure of unequal sides, and, consequently, unequal angles. It is different from parallelograms (q. v.), which are quadrilateral figures, with the opposite sides always equal. The word is derived from the Greek *τραπεζιον*, which had the same meaning in Greek geometry.

Trap-Rocks; an important class of rocks in geology, which derive their name from the Swedish word *trappa*, a stair, because they frequently divide into regular forms, resembling the steps of stairs. These rocks vary in texture, from an apparently simple rock to a confusedly crystalline compound, in which crystals of feldspar are disseminated. The predominant substance in the members of the family is a simple rock, of which indurated clay (wacke) may be placed at one extrēme, and compact feldspar at the other, the intermediate members being claystone or clinkstone. In some cases, it forms the whole mass; in others, it is mixed with other materials in various proportions, producing great diversities of aspect, without any material variations in the fundamental character. It often appears as if quartz, feldspar and hornblende composed the mass, and various circumstances determined their union in such a manner as to produce a large proportion of the different compounds known as trap-rocks, sometimes the hornblende being in mass, at others the feldspar, while the quartz rarely predominates. In other situations, confusedly crystalline compounds have been the result. Quartz, feldspar and hornblende united form *sienite;* or feldspar and hornblende, without the quartz, constitute *greenstone*. The compounds occasionally contain disseminated crystals of feldspar, and thus become what are called *greenstone porphyries* (*diabase porphyroide*, French; *Grunstein Porphyr*, German). A paste of green hornblende, containing crystals of feldspar, constitutes the *antique green porphyry* (the *ophite* of the French). Some of the trappean rocks are often vesicular, in the manner of modern lavas; the vesicles, however, being generally filled up by some mineral substances, which have been infiltrated into them subsequent to their formation. Such substances are either agates, calcareous spar, or some of the zeolitic minerals. From these cavities frequently being of an almond shape, or rather from the appearance of their solid contents resembling almonds in form, the term *amygdaloid* has been applied to rocks of this description. It must be understood that the base, or paste of the amygdaloids, is not constantly the same, but is liable to vary materially. A trap-rock is sometimes both amygdaloidal and porphyritic at the same time. Other minerals besides those above enumerated occur in the trappean rocks, but cannot be considered as forming an essential part of them, with the exception of augite and hypersthene, which, with the mixture of either common compact, or glassy feldspar, constitute the *augite* and *hypersthene rocks*. It would be inappropriate to the present article to attempt a notice of the various aspects under which these rocks present themselves. It should, however, be remarked, that the term *basalt* is applied to substances which are not precisely the same, being sometimes given to a fine compound of augite and compact feldspar; at others, to a minute mixture of hornblende and compact feldspar; sometimes to dark, indurated claystones, and finally to a compound of feldspar, augite and titaniferous iron. The last mixture seems that now most commonly termed *basalt*. Basalt is possessed of a greenish, or brownish, and sometimes of an iron-black, color. It is difficult to break, and possesses a considerable degree of hardness. It is fusible into a black glass, and is magnetic. The iron which it contains, as is the fact also with greenstone, passes, when exposed to the air, into a further state of oxygenation; and they are consequently generally covered with a reddish-brown incrustation.—The whole family of trap-rócks have, on the one hand, a close alliance with volcanic rocks, and, on the other, with the more ancient rocks of porphyry and granite. The gradation of trap-rock, having, in some parts, a volcanic character, into true granite, has been observed in a mountain near Christiania, in Norway. The lower rocks are gneiss, over which occurs dark slate, in which are beds of blackish limestone, containing organic remains. These beds are covered by an enormous mass of porphyry, varying in thickness from 1600 to 2000 feet. In the lower part of the bed, the porphyry becomes vesicular, and changes into an amygdaloidal basalt, containing crystals of augite. Basalt, associated with porphyry in enormous masses, often covers the primary mountains of the Andes. They are arranged in regular columns, which strike the eye of the traveller like immense castles in the sky. Porphyritic rocks may, in general, be regarded as more ancient than basaltic rocks, as porphyry most frequently occurs intermixed with, or covering, transition rocks, and basalt is most commonly associated with the secondary strata, which it either cuts through in the form of dikes, or covers unconformably. Sometimes it appears to have broken the strata confusedly, and to have enveloped large portions of other rocks. All the trappean rocks give decisive indications of an igneous origin, not only in the shapes of their masses, but in their action on the adjacent rocks. Where basalt is in contact with gneiss, it becomes nearly compact, and approaches to the character of hornstone; and where greenstone rests on sandstone or clay, these rocks have a red and burnt appearance, and a hardness superior to what they possess in other places. Where they cross the coal strata, and come in contact with the seams of coal, the substance of the coal is, for several feet, converted into soot. At a greater distance from the trap, the coal is reduced to a coke or cinder, which burns without smoke, and with a clear and durable heat. At the distance of fifty feet from the dike, the coal is found in its natural, unaltered state. The thickness of trap dikes varies from a few inches to twenty or thirty yards. The extent to which they reach across a country has seldom been explored beyond the mining districts. The longest in England extends from the western side of Durham to Berwick, in Yorkshire. These dikes are generally harder than the rocks they intersect, and, when the latter are partly decomposed, often remain, forming vast walls of stone, that rise above the surface of the ground. They also extend into the sea, and give rise to reefs of rocks; and, when they cross the beds of rivers, they form fords, and sometimes hold up the water, and occasion cascades, of which there are frequent instances on the river Tees. From these circumstances, it seems conclusive that basalt and greenstone (and the same may be affirmed of the other varieties of trap-rocks) were thrown out in a melted state, like lava, and poured over the surface of the ground. The frequent occurrence of trap-rocks forming isolated caps on distant mountains, was for a long time considered as opposing the hypothesis of the igneous origin of basaltic rocks; but a more attentive observation of such districts has established the fact, that these isolated caps are parts of continuous beds, which have, in remote ages, been excavated by valleys, in the same manner as the beds of other rocks, which frequently form isolated caps on detached mountains.—The occurrence of thick beds of basalt, divided into regular pentagonal or hexagonal columns, and disposed in ranges of vast extent and height, early attracted the attention of mankind, and gave rise to various theories respecting their formation. Few countries in the world present more magnificent deposits of columnar basalt than the north part of Ireland and some of the Hebrides. The Giant's causeway (q. v.), in the county of Antrim, constitutes a small part of a range of this description. The promontories of Fairhead and Borge, in the same range, are situated eight miles from each other. These capes consist of various ranges of pillars and horizontal strata, which rise from the sea to the height of 500 feet. From their abruptness, they are conspicuous, and form a pile of natural architecture, in which the regularity and symmetry of art appear to be united with the wild grandeur and magnificence of nature. Many of the columns in the ranges at Fairhead are 150 feet in height, and five feet in breadth. At the base, along the shore, is a wild waste of rocky fragments which have fallen from the cliffs. resembling the ruins of enormous castles. At the Giant's causeway, the columns rarely exceed one foot in breadth and thirty in height. They are sharply defined, and the columns are divided into smaller blocks, or prisms, of one foot or more in length, which fit neatly into each other, like a ball and socket. The basalt is close-grained, excepting the upper joint of the column, which is often cellular. The columns usually have five or six sides; but some have seven or eight, and others only three. Beds of basalt that are not columnar, in some places lie over, and also under, the columns. The basalt of the beds is amygdaloidal. The columns at Fairhead are not articulated like those of the Giant's causeway; but blocks, which are of great length, lie flat on each other. The trap formation appears to extend on the coast and inland about forty miles in length and twenty in breadth. The basaltic columns of the island of Staffa are too well known to require a description. No formation of genuine basalt has hitherto been found on the North American continent, at least north of Mexico. But localities of the greenstone trap are found in several districts, and present nearly all the peculiarities of the true basalt, differing from it only in possessing a lighter green color, a less compact fracture, and a less decided columnar structure. A formation of it begins near the north line of Massachusetts, and proceeds down the valley of the Connecticut to Long Island sound. Its first considerable elevations at the north are in Greenfield and Deerfield. It then appears in the borders of Belchertown, and forms mount Holyoke (1000 feet high), which, running eight miles west, disappears at Rock Ferry, below Northampton. On the opposite side of the Connecticut, it rises again in mount Tom to the height of 1000 feet, and so continues about six miles towards the south. The same range extends into West Springfield, Westfield and Southwick, Massachusetts, and, in Connecticut, forms the Talcott mountain, Farmington, Meriden and Southington mountains, and, having a number of subordinate parts and parallel ranges, terminates at East and West Rock, in New Haven. Another extensive formation occurs in New Jersey, forming the summits of almost all the mountains between the western primitive highlands and the Hudson. The west banks of the Hudson, for many miles above New York, present this rock in very well-pronounced columns, some of which rise, with more or less interruption, to the height of 150 feet. Again, this rock abounds in the vicinity of the Basin of Mines, in Nova Scotia, and upon the coast of Labrador, on the St. Lawrence. Greenstone porphyries and sienite, as well as ophite, are found in many places in the vicinity of Boston, Massachusetts; and a variety of greenstone (supposed to be of older origin than that above described), sometimes called *primitive* greenstone, occurs at several places in New England, both in beds and dikes.—The trappean rocks, when free from vesicular cavities, are valuable for architecture, especially the greenstone trap, which is quarried with little or no expense, since it breaks naturally into angular pieces, with smooth faces. Basalt is wrought into vases, tables for inscriptions, &c.; but its working is attended with great expense. The ophite, when handsome, is much prized.

Trappe, La, Trappists. In a valley of Normandy, thirty-four leagues northwest of Paris, Rotrou, count of Perche, founded a Cistercian abbey, in 1140, which, from its difficult access, he called *La Trappe* (trap-door). It was approached by no path, and the traveller was obliged to direct his course by the sun and the appearance of the trees. The deep silence of the wild valley, surrounded by woods and rocks, was sufficient to satisfy the most ascetic disposition. In the sixteenth century, the monks, however, had become so licentious, that they were the terror of the surrounding country, robbing, murdering and kidnapping young females: this wild and lawless conduct procured them the epithet of the "bandits of La Trappe." In the seventeenth century, the abbey, then containing but six or seven monks, was conferred on De Rancé, then (1636) ten years old, as a sinecure benefice. In 1664, after a youth passed in dissipation, he became regular abbot of La Trappe, and accomplished a most rigorous reform of the monastery. The Trappists prayed eleven hours daily, and passed the rest of their time in hard labor and silent meditation. Beyond the sacred hymns and prayers, and their usual salutation, *Memento mori*, no word passed their lips, but even their wishes and wants were indicated by signs. Their meagre diet consisted solely of fruits and pulse, flesh, wine and butter being entirely prohibited. They received no information of what was going on in the world, and no news from their relations; all their thoughts were devoted to penance and death, and every evening they dug their own graves. Louisa, princess of Condé, founded a female order of Trappists. The Trappists were obliged to leave France at the time of the revolution; but they returned in 1815, when their house was restored to them. A traveller, who visited them in 1818, found their number to amount to a hundred, of whom more than half were lay brothers and *frères donnés*, who pass only a certain time at La Trappe for the performance of some acts of penance. The professed brothers wear a dark-colored frock, cloak, and hood, which covers the whole face. The order has, besides, three other houses in France, the abbey Jara, near Amiens, Mellerai, in the department of the Loire Inférieure, and an abbey at St. Aubin. There is, likewise, a female convent not far from La Trappe.

Trass. (See *Cements*.)

Trastevere. (See *Tiber.*)

Travels and Voyages. Travelling has always been one of the means of forming the character for the business of life, and for promoting scientific knowledge. By travelling, the ancients prepared themselves to become legislators and philosophers, as, for instance, in the cases of Lycurgus, Solon and Pythagoras. Herodotus travelled to study history. The statesman and the man of the world, the scholar, the naturalist, the geographer, the physician, the artist, the merchant, the political economist, the soldier, &c., each has his own objects in travelling. Young men who travel extensively by way of completing their education, should be well acquainted with the ancient and modern classics, mathematics, the principles of trade, political economy, history, statistics and geography, and with one or more foreign languages. The main object of the tour should be, in the first place, well settled, and all others be made subordinate to it. The young traveller should not strive so much to observe a great variety of things, as to learn accurately what is essential. (See Reichard's *Guide des Voyageurs.*) In the history of scientific expeditions, the five following divisions may be made:—1. The earliest age of the Phœnicians, down to Herodotus, 500 B. C. The Phœnicians undertook the first voyages of discovery for commercial purposes, or to found colonies. Their colonies did the same. Unhappily, the accounts of these voyages are very obscure (as, for instance, of the circumnavigation of Africa), or couched in figures (like the first navigation of the straits of Gibraltar), or entirely lost. We know but little of their discoveries out of the Mediterranean sea. They discovered the island Cerne (Arguin), on the western coast of Africa, the Red sea, Madeira, and the Tin islands (England); they imported amber (probably obtained in their dealings with the Jutes). Their caravans to Asia and Africa gave them a knowledge of certain countries, beyond what we now possess. The Tyrian colony, the powerful Carthage, undertook still more extensive expeditions of discovery; but they are forgotten, and their results have perished with the state itself.—2. The travels of the Greeks and the military expeditions of the Romans, from 500 B. C. to 400 A. D. The Greeks made journeys to enlarge the territory of science. Besides the earlier travels of Herodotus, who has given faithfully the results of experience, and besides the almost contemporary voyages of the Carthaginians, Hanno and Himilco, we are acquainted with the voyage of Scylax of Caryanda, who lived about the time of the Peloponnesian war. About 300 B. C., Pytheas of Marseilles first instituted astronomical observations, to determine more exactly the situation of places: he undertook two expeditions to the north; but we unhappily possess only fragments of the accounts of them. He proceeded even to Thule (*Thual*, in Irish, signifies the *north*), probably Iceland, where the floating ice filled him with surprise, and north-easterly as far as the Dwina, which he believed to be the Tanais, connecting, like a canal, the North sea with the Black sea. Instructed by the accounts of Alexander's expeditions, and by the sight of the subjects which this king sent him, Aristotle enlarged the territory of geographical science. Soon after Alexander's death, the materials that had been collecting since Herodotus were employed by Eratosthenes, whom we know only from Strabo, who, 300 years after (A. D. 10), produced a new edition, as it were, of the works of Eratosthenes, in seventeen books. Since Alexander's wars, Asia, as far as the Indus and Ganges, had become better known, and the Greek Macedonian empires, that sprang up there, still farther extended the knowledge of it. The armies of Rome supplied, in this period, many materials for the knowledge of countries. Asia was directly known to them of India; they obtained a knowledge from Egypt by means of the commercial intercourse between the two countries; the northern part of Africa was opened to them from Egypt to the Niger; and in Europe they became acquainted with the peninsula of the Pyrenees, Gaul, South Britain, Germany as far as the Elbe, Dacia and Pannonia.—3. The expeditions of the Germans and Normans till 900 A. D. The migrations of the nations in the fifth and sixth centuries brought with them information respecting countries which had been unknown or merely the theatre of wild fictions. The Byzantines came in contact with many new tribes, respecting which its writers have left us much valuable information. The Arabians have done much for the more accurate knowledge of the earth by their campaigns, their commerce and their scientific investigations. The sword opened to them a portion of North-eastern, Central and Western Asia, Northern Africa and Spain; and their commercial expeditions, by sea and land, extended as far as the Indian islands, China, and the interior of Africa; but they have done less for the scientific improvement of geography than for the knowledge of different nations. What the Arabs contributed by their conquests to this knowledge in the eastern part of the known world, the German tribes effected in the west, by coming in close contact with the more cultivated nations of the Western Roman empire. Farther to the north, the Normans did more than the Germans; for we are indebted to them for new, though but accidental, discoveries. In their voyages, they discovered the Faroes, Iceland in the year 861, Greenland in 982, the western coast of which was immediately occupied by Norman settlers; and, twenty years later, the Norman Björn, being driven to the south-west by a storm, discovered Winland (Wineland, so called from the wild grapes found there), probably the eastern coast of Labrador, with which the whole description agrees. The great Anglo-Saxon king Alfred, who died in 901, set on foot, about that time, two voyages of discovery under two Normans, viz. Other, who proceeded from Norway round the North cape into the White sea to Biarmen (Permia), and Wulstan, who went from Sleswick to the gulf of Finland.—4. Besides the commercial and military voyages of the Arabs and Mongols, the travels of the Christian missionaries and some Europeans, down to 1400, furnish much valuable information. Pilgrims undertook long journeys; the crusaders diffused a more correct knowledge of Sclavonian Germany and of Asia; and the popes even sent envoys to the Asiatic sultans, and subsequently to the khans of the Tartars, to avert the further advances of these hordes. Boniface did much for the better knowledge of Germany by his travels as a missionary in 775, St. Otho for Northern Sclavonia in 1124, and Ansgarius, who died in 865, for Denmark and Sweden. There were also individual secular travellers, such as John Mandeville of England, in 1327; John Schildberger, a German soldier, who was taken prisoner at Nicopolis, in 1396, by the Turks, and afterwards by the Mongols, and thus had an opportunity to become better acquainted with those nations. A hundred years before, about 1270, the Venetian Marco Polo travelled through all Asia as far as Cathay (China); and at the same time with Schildberger, the brothers Zeno, two Venetian nobles, undertook a journey to the north. —5. The fifth period (from the year 1418) now begins with Henry the Navigator and Columbus; and we now first meet with voyages of discovery, properly so called. The invention of the mariner's compass, between 1250 and 1320, by the aid which it furnished to navigation, led to extensive voyages. The Italians, especially Venice and Genoa, first set the example; but their commercial jealousy has deprived us of much of the benefit of their acquisitions. Their commercial gains excited other nations to similar enterprises. The Portuguese wars with the Mohammedans made them acquainted with Africa, and the eagerness for further discovery was encouraged and guided by the Infant Henry the Navigator (q. v.), who pointed out the path to be pursued. Porto Santo, Madeira, the Azores, were discovered between 1418 and 1450; in the latter year, Senegal also, and, soon after, Arguin (the Cerne of the ancients). In 1462, Guinea was reached; and, in 1486, Barthol. Diaz doubled the southernmost promontory of Africa, which he named the *cape of Storms*, but which his king, John II, called the *cape of Good Hope*. The Portuguese Vasco da Gama (q. v.) discovered the passage to the Indies around Africa in 1498; but Genoa continued to conduct its commerce through the ancient channels, and Spain was so much occupied with the Moors of Grenada, that the enthusiastic Columbus could no where obtain a hearing for his plan of seeking a new way to India towards the west. The Spanish queen Isabella finally gave him her support, and he put his project in execution. Oct. 12, 1492, he came in sight of land, which proved to be an island (the island of Guanahani, or St. Salvador). On his third voyage, in 1498, he reached the main land. About the same time (1497), Sebastian Cabot, an Englishman, discovered the coasts of N America, from Labrador to Virginia. In 1500, Cabral, driven by a storm, discovered Brazil; Bastidas discovered Terra Firma, and Cortereal visited Labrador and Hudson's bay. In 1512, Ponce de Leon discovered Florida, and Balbao crossed the isthmus of Darien, and came in sight of the Pacific ocean. It was now first known that a new continent had been discovered, separated from Asia by a vast ocean, in which it was deemed probable a second new world might exist. The learned Florentine Amerigo Vespucci (who died at Seville, 1512) now made Europe acquainted with the character of the newly-discovered countries by his description. In 1519 et seq., Fernando Magellan sailed round the southern extremity of America, through the straits named from him, and discovered the western passage to the Indies. By degrees the interior of America emerged from obscurity; Cortez and Pizarro, Almagro, Cartier and Orellana, made the most important discoveries respecting it, from 1525 to 1541. More accurate information respecting the northern and eastern parts of America was furnished from 1559 to 1616 by Francis Drake, Frobisher, Heemskerk, Hudson and Baffin. Whether Asia was connected with America was as yet unknown; but, in 1648, the Cossack Semen Deshnew proceeded from the river Kolyma, around the peninsula of the Tchouktsches, through Beering's straits, to the mouth of the Anadir. What had been rendered tolerably clear by this voyage was reduced to a certainty, in 1726, by captain Beering, who proceeded from the river of the Kamtschadales, through the straits named from him, to the peninsula of the Tchouktsches. This was confirmed by several subsequent voyagers, and by Cook, in his third voyage. They and Vancouver explored more particularly the western coast of America. The North American revolutionary war made the country still more known; and much information was diffused respecting South America by the missionaries, such as the Jesuit Dobrizhofer, in Paraguay. The most light, however, has been shed on that part of the western continent by the travels of Alexander von Humboldt (q. v.), the prince of Neuwied (q. v.), and those of several Englishmen and Germans in Brazil. (q. v.) The expeditions of discovery into the interior of Africa have been less productive. The Portuguese explored those countries only which were situated near the coast, in the prosecution of their commerce with India. Prior to Vasco da Gama, the western coast was explored, and after him the eastern coast (since 1497); but they did not discover the Red sea till the sixteenth century, although they were acquainted with Abyssinia.—See Damien da Goes, *De Rebus Æthiopicis, etc.* (Cologne, 1574). Egypt was visited by pilgrims, but the knowledge of it remained, nevertheless, very imperfect. The south cape of Africa was particularly explored, indeed, by the Dutch; but farther to the north, the Swedes Sparmann and Thunberg first penetrated, afterwards Levaillant, and, finally, Lichtenstein. James Bruce travelled to Abyssinia and Nubia, 1768—1773; and his account of the sources of the Nile was confirmed by Salt in 1809. A comprehensive plan for exploring the interior of Africa was projected, and has been hitherto pursued by the African association (q. v.), formed in England in 1788. Much light has been thrown upon particular countries by the travels of Burckhardt, Bowditch, Mollien, Campbell, as well as those of lord Valentia and Salt to Abyssinia, those of Belzoni, Gau, Menu von Minutoli, to Egypt, and those of J. R. Pacho to Cyrene, in 1824. In April, 1828, Caillié, a young French traveller, succeeded in reaching Timbuctoo (see *Caillié*, and *Timbuctoo*), and the Landers (q. v.), in 1830, traced the Niger, and discovered that it emptied into the Bight of Benin. (See *Africa*, and *Niger*.) Asia was first visited by the Portuguese, but subsequently chiefly by the English and Russians. As early as 1498, Vasco da Gama discovered the coast of Malabar; and, before 1542, almost all the south coast, with its islands, and even Japan, were discovered by the Portuguese. But the coast alone was known, till, in the middle of the sixteenth century, the English laid the foundation of their dominion in India, by which the interior of Asia has been opened to civilized Europe. Farther to the north, the Russians undertook important expeditions. In 1577, Siberia was explored by the Cossack captain Jermak Timosejeff and the Russian merchant Stroganoff. In 1639, Kopiloff reached the eastern coast of Asia, and soon after, Kamtschatka was discovered. Since 1745, the Kurile, and the Aleutian, or Fox islands, on the coast of America, have come to light; and in the north of Asia, Müller, Gmelin, Lepechin, Güldenstädt, Falk, and, above all, Pallas, have made the most important expeditions, under the patronage of the Russian government. After Lapérouse had already accurately determined the north-eastern coasts of Siberia, the Russians explored the Caucasus and the Caspian sea, by means of Gärber, Reineggs, Klaproth, Parrot, and Engelhardt; Golownin described his residence in Japan. The other regions of Asia also became better known; Arabia, by the travels of Carsten Niebuhr, who visited it under the direction of the Danish government, in 1761, to add to the means for illustrating the Bible; Persia, chiefly by those of J. Chardin, from 1664 to 1677, and, of late, by those of Morier and Ouseley; Cabul, by those of Elphinstone; Syria and Palestine, by means of pilgrims and explorers of antiquities. But the north of India

Thibet, and the interior of the great East Indian islands, are still little known. In the Southern ocean, the Portuguese suspected the existence of a new world; and the French jurist Bodinus, in his Introduction to History, in 1610, gives five grand divisions of the world—Europe, Asia, Africa, America, and Australia. In 1511, the Portuguese reached New Guinea; and Magellan, in his circumnavigation of the earth, likewise visited the Southern ocean. But these discoveries, like those of Mendoza, Mindana and Guiros (1568—1605), remained for the most part unimproved, till the Dutch, in 1615, sent out Lemaire, Schouten, Hertoge and Tasman on voyages of discovery, and became acquainted with New Holland, New Zealand and the Friendly isles. Dampierre shed new light, in 1698, on the countries in the Southern ocean, and Cook explored this new world so accurately, in 1768 and the following years, that little was left for Vancouver, Lapérouse, Kruesenstern and Kotzebue. The discovery of a coast near the south pole, made by British navigators in 1819, which was called New South Shetland, promises to add to the science of geography. (Respecting the latest scientific travels of British adventurers to the north pole, see *North Polar Expeditions*.) Hitherto, there has been wanting a critical description of the various voyages of discovery. It would perhaps be the best method of studying geography, if the extension of geographical knowledge, gradually produced by travels since the times of Moses and Homer, could be brought before the youthful understanding in an orographical and hydrographical description. Many good materials for this object are contained in Zeune's *Ansichten der Erdkunde* (Berlin, 1815), and his *Gäa*, as well as in Sprengel's *Geschichte der Geograph. Entdeckungen*, in Von Zimmermann's writings, and in Malte Brun's History of Geography. Murray published a Historical Account of the Discoveries and Travels in Africa (Edinburgh, 1817, 2 vols.), has a Historical Account of the Discoveries and Travels in Asia (Edinburgh, 1820, 3 vols.); and an Account of Discovery in N. America (1829). A chronological view of travels, with literary and biographical notices, is a desideratum; for the attempts of Stuck (in his *Verzeichnisse*, reaching to 1735), Boucher de la Richarderie and Beckmann are imperfect. Even the great collections of travels which have been published by Ehrmann, Sprengel, Bertuch, &c., at Weimar—*Bibl. der Wichtigsten Reisebeschr.*, extending already to 94 volumes—by Pinkerton, in London, 1808—1813, by Robert Kerr, in London, 1814, and by others, as well as Spiker's *Journal der Land-und Seereisen*, are not compiled on a strictly scientific plan. This is also the case with the *Hist. Générale des Voyages*, by Walkenaer (Paris, 1826), of which three volumes have been published. The first germs of geography are contained in the Mosaic records, and the book of Joshua (1400 B. C.); in Homer, Hesiod, (1000 B. C.); Herodotus and Aristotle (444 and 320 B. C.); Hanno, among the Carthaginians (440 B. C.). (Respecting these works, see the modern critical geographers, Rennel, Gosselin, Mannert, Voss, &c.). Polybius, Hipparchus, Artemidorus, added, 300 years afterwards, new accounts of travels; Juba, king of Mauritania, described Lybia as it was in the age of Augustus, and Strabo, A. D. 10, collected all former discoveries in a comprehensive work. The same thing was done by Pomponius Mela, A. D. 50, and, twenty years afterwards, by the industrious Pliny. Under the emperor Adrian, Arrian described Lybia; and Marinus of Tyre, in Phœnicia, A. D. 150, with his contemporary Ptolemy, fixed, with much more exactness, the situation of places. After them, geography ceased to be scientifically cultivated for upwards of a thousand years; but the knowledge of particular countries gained much by excellent books of travels; for instance, those of Pausanias (A. D. 170), Agathemer (A. D. 200), Marcianus of Heraclea (A. D. 200), and Agathodæmon. To this time, also, probably belongs the Table of Peutinger. (q. v.) All that was learned from the migrations of the German tribes, and from the crusades, was collected by the fathers of the church, from whose (often fictitious) narrations, an Egyptian monk, Cosmas, commonly called *Indopleustes* (Indus navigator) though he did not personally go beyond Æthiopia, compiled his Christian Topography (A. D. 450). About two centuries afterwards, lived the geographer of Ravenna (Sprengel calls him Guido, but this is only a corruption of his popular name, for he was a Goth), whose geography we know only from the careless abridgment of Galadro. Several instances of maps now occur. The map of Charlemagne was a silver tablet. Besides these Christian geographers, there were the Arab writers. Wahad and Abuzeid travelled through the Eastern countries of Asia, and have left descriptions of their travels

(A. D. 851—877); Abu Ishak published (A. D. 920) his travels from Khorazin to Sina. Massudi Kothbeddin of Cairo described (A. D. 947) the most celebrated kingdoms of the three parts of the world then known under the title the Gilded Meadow, and the Mine of Precious Stones. In the year 980, Ibn Haukal gave a description principally of the Mohammedan countries. About 1140, appeared the travels of the Almagrurim (the wanderers), and in 1153, appeared the celebrated Nubian geographer, the Sherif Edrisi. We ought to mention, moreover, the travels of the Jew Benjamin of Tudela, of the Syrian Ibn al Wardi, and the Persian Hambullah, from 1160 to 1240. Ruisbroeck (Rubriquis), a Minorite of Brabant, travelled, as ambassador from saint Louis to the great Mogul, through the chief part of Central Asia, and has left an account of the most interesting of his adventures. Almost twenty years after Ruisbroeck, in 1277, Marco Polo of Venice travelled through all Asia to Cathay (China). Fifty years afterwards, Abulfeda, prince of Hamah, in Syria, wrote his geographical work, Description of the Inhabited Earth. In 1390, the brothers Zeno of Venice made a journey to the north, which one of their descendants has described. At this time, there also appeared several maps by the Persian Nassir Eddin, by Picigno, Mart. Sanudo, Andrea Bianco, Benincasa, Roselli, Brazl, Behaim, and Ulug Beg, a grandson of Tamerlane, in Samarcand. The first map, containing America, was executed by the brothers Appiani; another was soon after prepared by Ribero. About this time, 1526, lived Leo of Grenada, who composed a description of Africa. Fifty years afterwards, the famous Gerard Mercator, a German, published his charts, and the measurement of a degree was now made, for the first time in Europe, by Ferrel, Schnell, Norwood, Riccili and Picard, between 1550 and 1669, 700 years after the Arabian Caliph Al-Mamun had caused the first measurement of a degree in Asia. In the beginning of the seventeenth century, the Austrian ambassador Von Herberstein (q. v.) rendered a great service to the geography of Russia by his Commentaries. At the end of the same century, Engelbrecht Kämpfer travelled to Japan, and has left us the description of his travels, which are still very valuable. In the beginning of the eighteenth century, the measurements of a degree by Condamine and Maupertuis, and the maps of Sanson and Homann, must be noticed. The attempts of the French, Swedish and Spanish mathematicians to measure a degree under different latitudes, have been pursued in the nineteenth century, and, in 1818, the British astronomers united their exertions with the French. Our maps have been very much improved by this means, as well as by the trigonometrical surveys of various countries, since the Cassini set the example in France. (See the *Monat. Correspondenz* of Zach, the *Algemeine Geographischen Ephemeriden*, the *Astronomisches Jahrbuch* of Bohnenberger and of Lindenau; see, also, the article *Geography*.)

Travesty (from the French *travestir*, to disguise) designates a comic treatment, particularly in poetry, of a subject which has been already handled gravely, so that it is, as it were, divested of its grave dress, and a comic one put on. Travesty presupposes weak points in the travestied subject; it takes for granted, that an air of grandeur has been attempted to be given to littleness. But, in fact, most travesties purposely degrade the subject treated, in order to make it appear ridiculous. In its proper character,—that of ridiculing littleness, which has assumed the shape of greatness,—it differs essentially from parody, which employs the existing poetical dress of a grave subject, for clothing a ridiculous one. Both depend on contrast, and, though they may excite a laugh, hold a very inferior place among the various species of poetry. It has been asked whether they are at all admissible. As respects parody, which only imitates the form of a grave composition, but without ridiculing its subject, there seems to be no sufficient reason for condemning it entirely. But travesty, being a direct attempt to throw ridicule on subjects of an elevated character, seems less entitled to indulgence. Still, however, when the poet merely seizes upon the weak points which he actually finds in the midst of greatness and dignity, and exposes them in a form adapted to produce a comic effect, he will divert his reader, without degrading the truly noble, or impairing the effect of works of an elevated character—a reproach which has been so often brought against travesty, since the time of La Mothe. The finest comic productions of the Greeks sprung from this freedom of mirth; and, though the Grecian spirit inclined more to the parody (for instance, the *Batrachomyomachy* (q. v.), the parodies of Matron, and his fragments, in Athenæus ii, 5, and innumerable passages of Aristophanes), travesty was yet by no means unknown by them, but showed itself with equal boldness in the productions of the fine arts, and in comic poetry; the highest of their gods were made to appear in works of sculpture, and on the stage, in a comic character. The question, however, still remains, whether travesty is not a dangerous game, and especially in the case of such nations as have a natural tendency to levity, or in ages when taste has degenerated, lost its susceptibility for the great and noble, and become eager for amusement solely. In such cases, travesty undoubtedly tends to encourage a tendency which is already excessive; and even in those cases in which it may be allowable for the sake of the satisfaction to be found in a hearty laugh, it requires a sound judgment, both in the writer and reader, and should be enjoyed with much caution, to prevent it from exciting a sickly craving for amusement. Travesty is either purely comic, the free effusion of a sportive humor, or it unites with the object of mirth that of satire. It may exhibit the ridiculous side of a subject, or may merely attack the form in which it is presented, and show the incongruity between the two. Either mode is consistent with the general aim of satire, the lashing of folly and vice. In respect to its form, the travesty is either lyrical, epic or dramatic. Among the moderns, the French have the most writers of travesties, as Marivaux, Scarron (who travestied Virgil), and Moreau; the Italians possess a travestied Iliad, by Loredano, which does not, however, correspond to the true object of travesty; the Germans have, besides several smaller lyrical poems of the kind, a travesty of the Æneid; by Blumauer (q. v.), which often runs into vulgarity, but is not without wit. Cotton and Philips have travestied Virgil's Æneid in English. There are also various other English travesties, but generally too vulgar to be worthy of mention.

Treadmill, an instrument of punishment, lately introduced into England and this country, consisting of a large wheel, about twenty or twenty-five feet wide, with steps on its external surface, upon which the criminals are placed. Their weight sets the wheel in motion, and they maintain themselves in an upright posture by means of a horizontal bar fixed above them, of which they keep hold. The power thus obtained may be applied to the same purpose as water power, steam, &c. The exercise is very fatiguing, and the prisoners are relieved every eight or ten minutes.

Treason. Treason, the *crimen læsæ majestatis* of the Roman law, is considered to be the greatest crime that can possibly be committed. All crimes are regarded by the law, and punished, as offences against the peace and dignity of the community; and that crime which attacks directly the supreme authority of the state, is the most aggravated and heinous. Such is treason, or high treason; the minor species, or *petty* treason, being a treachery to some political or religious superior, who is not the chief of the state. There is no offence in the U. States that passes under the name of petty treason, nor does there seem to be any subject to which the appellation could be given, except an offence against a government of one of the states, to which it could not be properly applied, since these governments are, in some respects, supreme. Treason is, accordingly, differently defined, in reference to what is the supreme power of the state. In a monarchy, it is considered to be the betraying or the forfeiting of allegiance to the monarch; but in a community not governed by a supreme hereditary chief, it has reference to the government, or the whole body of the community. This crime can be committed only by a subject of the sovereign power, or a citizen of the state to which he owes allegiance, and only against such sovereign or state; and it consists essentially in renouncing his allegiance, and putting himself in the attitude of enmity or hostility. A traitor puts himself in the same relation to his own sovereign or state that a pirate holds to all states and governments. As all violations of the laws are acts of disrespect and disobedience to the authority by which these laws are enacted and administered, Socrates considered the act of escaping from prison, and so avoiding the punishment of death, which awaited him, as inconsistent with his allegiance to his state, and a sort of treason, and, for this reason, refused to make use of the means offered for his escape. But whatever opinion may be formed of the force and extent of the obligation of obedience to the laws in general, there is a characteristical distinction between other violations or evasions of the laws, and treason, which crime consists in betraying, setting at defiance, or making war against, the supreme authority. Such is the distinguishing characteristic of treason, in the application of which to particular acts, there has been a great diversity. No one subject of legislation and juridical interpretation has been more fruitful of abuse, oppression and cruelty. The more arbitrary governments, whether popular, aristocratical or monarchical (for all these species may be equally arbitrary), have construed the most indifferent and insignificant acts into treachery to the government, and a forfeiture of the sacred obligations of allegiance. In the reign of Edward IV, in England, a citizen of London said he would make his son heir of the crown, meaning the sign of the house in which he lived. For this pun, he suffered death, under a conviction for high treason. In the same reign, a gentleman, whose favorite buck had been killed by the king, in hunting, said, in his vexation, he wished its horns in the belly of the person who had counselled the king to kill it; and, as the king had killed it of his own accord, and was so his own counsellor, this expression was construed to be high treason, for which the party suffered death; though one of the justices of the court in which the judgment was given, justice Markham, chose rather to leave his place on the bench, than to assent to such a judgment. Those convictions were had under the species of treason, which consists in compassing or imagining the king's death. It was under the same description of this crime, and in pursuance of a still broader interpretation of it, that Dionysius, the tyrant of Syracuse, ordered a man to be executed, for *dreaming* of the tyrant's death, on the pretence, that he would dream of only that which had occupied his waking thoughts. This was construing to be treason what was not even the act or thought of the party executed. But, when some act of the party accused has been considered requisite to constitute this crime, instances have occurred, of constructive treasons, which were little more than dreams. Algernon Sidney was condemned in the court of king's bench for treason, while the infamous Jeffreys was chief justice, and executed in pursuance of the sentence, in the time of Charles II, on the proof of some abstract speculations on the subject of government, found in his hand-writing, in his private cabinet, and not proved to have been shown to any other person, or intended for publication. These were construed to be an *act* of treason, because *scribere est agere* (to write is to act); and, upon this construction, he was executed for what was little more, in a juridical view, than a waking dream reduced to writing. The legislation of parliament, during the reign of Henry VIII, seconded the capricious and arbitrary disposition of that monarch, by creating a multitude of descriptions of high treason, such as stealing cattle by Welshmen; counterfeiting foreign coin; wilful poisoning; execrations against the king, and calling opprobrious names by public writing; licentious solicitation of the queen or a princess; a woman's becoming married to the king without first disclosing any deviations from chastity, which she might have committed; judging or believing the king to have been lawfully married to Anne of Cleves; derogating from the king's royal style or title; assembling riotously, to the number of twelve, and not dispersing on proclamation. It would be tedious to enumerate all the acts, which, by legislative enactments or judicial construction, have been brought under the denomination of treason, and, on the imputation of which, men have been barbarously put to death. The present law of treason in England rests substantially upon the statute of the twenty-fifth year of Edward III, which comprehends seven descriptions, viz. 1. compassing or imagining the king's death; 2. violation of the king's companion (meaning the queen), his eldest daughter, unmarried, or the wife of his eldest son and heir; 3. levying war against the king, in his realm; 4. adhering to his enemies in his realm, and giving them aid and comfort in the realm or elsewhere; 5. counterfeiting the great or privy seal; 6. counterfeiting the money of the realm, or bringing into the realm any counterfeit of the national coin; and, 7. slaying the chancellor, treasurer, either of the justices of the court of king's bench or common pleas, or of the justices in eyre or of assize, when in the discharge of their judicial functions, in open court. To the provisions of this statute others have been added, by other statutes, relating, 1. to Papists; 2. to falsifying the coin; 3. to the Protestant succession in the house of Hanover. Some of these laws have become obsolete by the extinction of the Pretender's branch of the reigning family, and the laws in relation to Popery have been materially modified and mitigated. It is evident, from the preceding enumeration of acts, now or heretofore considered in England as constituting treason, that this is a subject of legislation and juridical administration, in which the liberty of the subject or citizen is very deeply concerned. "The natural inclination," says Mr. Rawle, in his View of the Constitution of the U. States, "of those who possess power, is to increase it. History shows that to enlarge the description of treason has often been resorted to, as one of the means of increasing power." The governors, whether for life or fixed periods, or by hereditary right, or election, or merely the right of the strongest, in estimating what acts of disrespect, indignity, or hostilities to themselves, or to the government of which they, for the time being, form a part, shall be considered as treachery to the state, and a dissolution of the ties of allegiance, are, very naturally, liable to err on the side of exaggerating the treasonable character and tendency of conduct. As far, therefore, as the influence of self-esteem, and a love of the exercise of power, are to be guarded against, it is important to limit the discretion of the governors, in putting a construction upon the conduct of the governed, in this respect. Accordingly, by the constitution of the U. States, treason is declared to consist in only two of the descriptions of acts already enumerated, viz. 1. levying war against the U. States, or, 2. adhering to their enemies. The framers of the constitution, not stopping at the limitation of the species, have also prescribed the kinds and degrees of proof requisite to conviction, by the provision, that no person shall be convicted of this crime, unless on the testimony of two witnesses to the same overt act, or on confession in open court. On the construction of this article, as to what shall be considered a levying of war, we refer to Dane's Abridgment, chapter 199, and so, also, as to the interpretation of what shall be considered as the giving aid and comfort to enemies. This crime may also be committed against any of the states, by the citizens owing allegiance to them, respectively. The punishment of treason is nothing less than death, and, by the laws of some states, a peculiarly cruel death; as in the cases of Ravaillac and Damiens in France. The English law condemns the convict to be drawn to the place of execution, there hanged, and cut down alive, and embowelled, and his entrails burned while he is yet alive; then he is to be beheaded and quartered. But the more barbarous and revolting parts of this punishment are usually remitted, the convict being drawn to the place of execution, it is true, but on a hurdle, and not on the ground, and, when he arrives there, is simply beheaded. The mode of execution in the U. States is by hanging. By the English law, a conviction of treason works forfeiture of lands and goods to the crown, and attainder of blood; so that no person can inherit an estate to which he must derive a title through the person convicted of this crime. This attainder may be reversed, that is, the punishment of the traitor's heirs for his offence may be remitted by act of parliament, as was done in respect to the heirs of Algernon Sidney. The constitution of the U. States also provides, upon this subject, that no attainder of treason shall work corruption of blood or forfeiture, except during the life of the person attainted. (See Blackstone's *Commentaries*, b. 4, c. 6; Dane's *Abridgment*, c. 199; Rawle's *View of the Constitution of the United States*; Chitty's *Criminal Law*.) In the French *code pénal*, the term *high treason* no longer occurs. Crimes against the peace and safety of France, and against the person of the king, or of the royal family, are punished with death and the confiscation of property (*Code Pénal*, A. 75—102). The Prussian code defines high treason as that crime which has for its object a subversion, by violence, of the government of the state, or which is directed against the life or liberty of its sovereign, and is distinguished, both from the *Landesverrätherei*, § 100 (by which the state is exposed to danger from foreign powers), and from crimes against the internal tranquillity and security of the state, and from the *crimen læsæ majestatis*, or of personal injury to the dignity of the head of the state. The Austrian penal code of 1805 defines high treason to be, 1. the violation of the personal safety of the sovereign, and, 2. undertakings for effecting a violent revolution of the government, or for producing or increasing a danger to the state from abroad. The Bavarian code (1813, of Feuerbach) assumes a kind of treason, without giving a definition of it, of which the first degree is called high treason, and is committed by attacks on the person of the king, with the intention of killing him, taking him prisoner, or delivering him into the hands of the enemy, and by attacks on the independence and constitution of the state. Assisting the enemy is treason of the second degree: treachery to the state, by the delivery of papers, &c., belongs to the third class: in the fourth, very different acts are brought together, such as applying to a foreign power, on account of a legal claim against the state, injuring foreign sovereigns and ambassadors, inducing subjects to emigrate, and levying soldiers for foreign powers. In the new plan of 1822 (by Gönner), these ideas are somewhat differently arranged. The second class of treasons is united with high treason; the idea of treason against the state is limited to the third class; and the fourth is brought under the title of actions dangerous to the security of the state. High treason is distinguished from other crimes, inasmuch as it is regarded as wholly perpetrated, i. e. is obnoxious to the full punishment of the law, so soon as the design is evinced by actions, and inasmuch as those are participators in it who are acquainted with treasonable projects, and do not reveal them.

Treasury. In the U. States, the department of the treasury is under the management of the secretary of the treasury. (See *Secretaries.*) In England, there was formerly a lord high treasurer, who was the principal officer of the crown, and under whose charge was the treasure in the royal exchequer. He was invested with his office by the delivery of a white staff to him by the king. But for upwards of a century, the management of the treasury has been put in commission. There are five commissioners, among whom are the first lord of the treasury, and the chancellor of the exchequer. The former is considered as prime minister, and has the appointment of all officers employed in collecting the revenues of the crown, the disposal of all places relating to the revenue, and power to let leases of crown lands. The latter, to whom is specially intrusted the revenue and expenditure of the nation, commonly takes the lead of the ministerial party in the house of commons, in which the seats occupied by that party are called the *treasury benches.* The offices of first lord of the treasury and chancellor of the exchequer are sometimes united in the same person, when the former is a commoner, as in the case of Pitt and Canning.

Trebia; a river of Italy, duchy of Parma, which falls into the Po above Piacenza. It is noted as the scene of Hannibal's second victory over the Romans (see *Hannibal*), and was also the scene of Suwarrow's victory over the French in 1799.

Trebisond, or **Tarabosan** (anciently *Trapezus*); a city of Asiatic Turkey, capital of a pachalic, with a harbor on the Black sea, founded by a Greek colony of Sinope; lon. 39° 28′ E.; lat. 41° 3′ N.; population estimated at about 15,000. The houses, mostly built of stone and lime, are of a mean appearance. It contains eighteen mosques, eight khans, five baths, and ten Greek churches, and is the residence of a pacha and a Greek metropolitan. The trade is considerable. The present walls are built of the ruins of the ancient edifices. The castle, which is much neglected, is situated upon a rock, and its ditches are cut in the rock. Trebisond was, at one time, the capital of a small kingdom, erected by Alexius, a Byzantine prince, at the time when the capital of the empire was captured (1204) by the Latins, or crusaders from the West. (See *Byzantine Empire.*) His successors assumed the imperial title, and continued to bear their family name, Comneni. (q. v.) After this little state had existed for two centuries, Mohammed II besieged and captured the king in his capital (1461), and incorporated the kingdom with the Turkish territories.—See Fallmerayer's *History of the Empire of Trebisond* (in German, Munich, 1827).

Trebuchet, or **Cucking-Stool.** (See *Cucking-Stool.*)

Trecht, Drecht, Tricht; termination of many Dutch names (derived from the Latin *trajectum*, passage, ford), as *Dordrecht*, *Utrecht*, *Mastricht* (passage of the Maas, Meuse). It is the same as the German *Furt.* (q. v.)

Treckschuyt; a sort of covered vessel, sixteen to twenty-six paces long, and three to six broad, drawn by horses, and used in the Netherlands on the canals. They go at fixed times from one town to another, and have generally a large apartment for all the travellers, together with a cabin for those who wish to be private.

Tree. (See *Plant.*)

Tree-Nails; certain long, cylindrical wooden pins, employed to connect the planks of the ship's side and bottom to the corresponding timbers. They are superior to spike nails or bolts, which are liable to rust and loosen. The thickness of the tree-nails is usually proportioned to the length of the ship, allowing one inch to every hundred feet.

Tree of Liberty. (See *Liberty Tree.*)

Tremolite. (See *Hornblende.*)

Trenches are, in general, all those works which are used in attacking a fortress; hence, when a siege (q. v.) is commenced, the trenches are said to be opened. Ditches are dug from three to five feet deep, from ten to twelve feet broad. and the earth taken from them is thrown up on the side toward the fortress, to afford a defence against the shot. In order to protect the flanks, the ditches are so extended as to reach beyond the fortress. This gives to the trenches a zigzag form. Trenches of this kind were first used by the French, at the siege of Harfleur, 1449. The idea of this mode of proceeding is found even among the ancients. Sometimes the besieged construct counter trenches (*contre approches*), to the extreme point of the trenches of the besiegers, and place cannon on them.

Trenck, Frederic, baron von der, a Prussian officer, born at Kőnigsberg, in 1726, was the descendant of an ancient family. In his youth he displayed an adventurous disposition, and, at the age of sixteen, was admitted to the court of Frederic the Great, as a cadet in the regiment of guards. The king made him his aid-de-camp, and, in the seven years' war, Trenck greatly signalized himself. An intrigue with the sister of Frederic involved him in severe misfortunes, and he was at length imprisoned in the fortress of Glatz, under pretext of his carrying on a correspondence with his cousin, Francis von der Trenck, commander of the Pandoors in the service of Austria. Having effected his escape, his relation, general Lieven, who was in the service of Russia, persuaded him to go to Moscow, where he was exceedingly well received. Having visited Sweden, Denmark and Holland, he returned to Vienna to take possession of the property of his cousin, who died in 1749, and then took a journey to Italy. On his return, he was appointed a captain of Austrian cuirassiers, and, joining his regiment in Hungary, he contributed materially to its improvement in discipline. The death of his mother taking place in 1758, he went to Dantzic to arrange the disposition of her property, when he was arrested and conducted to the fortress of Magdeburg, where he remained in close confinement till 1763. His involuntary seclusion was devoted to ineffectual projects for effecting his escape, to study, and to writing verses. Being at length set at liberty, probably through the interference of the princess Amelia, he went to Aix-la-Chapelle, where he fixed his residence, and, in 1765, married the daughter of a burgomaster of that city. Literature, politics, and commerce as a wine-merchant, then alternately engaged his attention. He wrote a piece entitled the Macedonian Hero, the professed design of which was to unmask the character of Frederic II, and edited a weekly paper called the Friend of Men. In 1772, he commenced a gazette at Aix-la-Chapelle, which he conducted for some time with considerable success. His wine trade failing, he returned to Germany, and was employed in various political missions. At Vienna, he received new favors from the empress, Maria Theresa, who bestowed a pension on the baroness Trenck, which, however, she lost on the death of that princess, for whom Trenck composed a funeral oration and ode. He then retired to his castle of Zwerback, in Hungary, where, for six years, he devoted himself to agricultural pursuits. He also published, by subscription, various works in prose and verse, including the history of his own life. After an exile of forty-two years, he was permitted to revisit his native country, in 1787, when he was kindly received by the successor of the great Frederic; and he had an interview with the princess, to whose favor he had owed so many of his misfortunes. The revolution in France found a ready partisan in Trenck, who published some political pamphlets, which involved him in disgrace with the Austrian government; and he not only lost a pension which he had hitherto received, but also suffered a short imprisonment. Towards the end of 1791, he revisited France, but was arrested on suspicion of being a secret emissary of the king of Prussia, and imprisoned at St. Lazarus. There being no evidence to support this charge, he was accused of having taken part in a conspiracy in the prison, for which he was guillotined, July 25, 1794.

Trent; a city of Tyrol (in Latin, *Tridentum*, called by the Italians *Trento*, and by the Germans *Trient*), formerly capital of a princely bishopric of the same name, sixty-five miles north-west of Venice; lon. 11° 4′ E.; lat. 46° 6′ N.; population, 9603. It is situated on the Adige, in a delightful valley among the Alps; but its climate is subject to great extremes, being intensely cold in winter and hot in summer. It is surrounded with walls, and contains a cathedral, two other churches, an hospital, a gymnasium, and a lyceum or central school. The streets are tolerably wide and well paved, the houses generally old. The inhabitants are employed partly in the manufacture of silk, and partly in the culture of vines and tobacco. Trent is remarkable for a famous council, commenced in 1545, terminated Dec. 4, 1563, having continued, with more or less interruption, during eighteen years. (See the next article.)

Trent, Council of. The reformation of the church, which had been the object of the councils of Constance and Basle, the policy of the popes would not suffer to be carried into execution. Pius II, in 1460, forbade an appeal to a general council, and Julius II renewed this prohibition in 1512. But to such a council only could Catholic Christendom look for the accomplishment of its earnest wish for a thorough reformation of the church; and, in the course of the German reformation, even the Protestant princes expressed their desire for such an assemblage of the clergy. The emperor Charles V urged it zealously. He found it a very effectual mode of alarming the pope, and curbing the Protestant princes, and thus controlling both parties, to persevere in demanding that a council should be convoked on German soil; for, whilst the pope justly feared the questions which might come under investigation, the German Protestants dared not, on account of the Catholic states, refuse at least to accept a proposal, which, in reality, was of importance only for the latter. Charles solemnly announced a council to the states at the diet of Augsburg, in 1530, and, in order to prevent his summoning it also, preparations for it were made in Rome. Accordingly, Clement VII, in that same year, decreed it, but without fixing the time; and Paul III, his successor, appointed it to be held, May 27, 1537, at Mantua. As the conditions offered by the duke of Mantua were not acceptable, the place was changed to Vicenza, and May 1, 1538, was fixed upon, when, as no prelates arrived, it was again delayed till Easter, 1539; and, as neither France nor Germany consented to the place selected, it was again postponed to an indefinite period, in consequence of the resolutions of the diet of Ratisbon, in 1541. Paul summoned it again for Nov. 1, 1542, and showed his willingness to choose a German city by naming Trent. His legates arrived there Nov. 22; but a war of the emperor with France gave occasion to another postponement to a more convenient time. Such a time the pope believed he had found amidst the preparations of Charles against the Protestants, and summoned the council to meet on March 15, 1545. The cardinals Del Monte, Cervino della Croce, and Pole, arrived at Trent, at the appointed time, as presiding legates; but as the number of bishops (twenty) and envoys who followed was but small, the time was spent in disputes about rank, and in pleasure excursions; the summer passed away, during which the prelates came and went, till at length, at the command of the pope, Dec. 13, 1545, the general council of Trent (*Sacrosancta œcumenica et generalis synodus Tridentina, præsidentibus legatis apostolicis*, thus called in the papal brief) was solemnly opened, twenty-five bishops and some other prelates being present. In the succeeding confidential conferences, it was agreed that committees of bishops and doctors of theology should prepare the subjects to be treated in particular and general meetings (not public sessions of the fathers); the proposed decrees and canons should be decided by a majority of votes (the votes being reckoned, not by nations, as at Constance, but by heads); the public sessions in the cathedral, with mass and preaching, should be merely ceremonial acts, for publishing and confirming the resolutions that had been adopted. This method of voting by heads, of which the Italian prelates and the titular bishops (who were both on the side of the pope) formed the majority, and the circumstance that the committees were chosen and instructed by the legates, was sufficient to give a turn to the council according to the will of the pope, who had formed, at Rome, a particular assembly of cardinals to consult upon the affairs of the council. Add to this the vigorous, proud and domineering spirit of the cardinal Del Monte, entirely devoted to his master; his daily, nay, hourly, correspondence with him by means of an uninterrupted line of couriers, which brought to him, according to the changing resolutions of the pope, public and private directions for every aspect of affairs, and many other arrangements by which the Roman policy was able to influence the assembled prelates according to circumstances. Hence even the Italian bishops were heard to complain, that the council was not a free one. Princes and people expected from this union of holy men the abolition of abuses which had been long complained of, and an improvement of the church in its head and members, which would obviate the objections of the Protestants, and induce them to return to the bosom of the Catholic church. The imperial envoys openly urged that this should be the chief object of their labors; yet in the second and third sessions, Jan. 7 and Feb. 4, 1546, nothing was done except the reading of rules for the regulation of the fathers while at Trent, of exhortations to extirpate heretics, and of the Nicene creed. From the fourth to the eighth of April, when five archbishops and forty-eight bishops were already assembled, two decrees were enacted, in which the reception of the Apocrypha into the canon of the Holy Scriptures was taken for granted; tradition was declared of equal authority with the Bible; the Latin translation of the Bible, known by the name of *Vulgate*, was received as authentic; and the church was declared the only legitimate interpreter of them. From these, as well as from the decrees of the fifth, sixth and seventh sessions, June 17, 1546, Jan. 13, and March 3, 1547, on the doctrines of original sin, justification, and the seven sacraments, till then not confirmed by a statute of the church, it was evident that the pope and his legates had the intention of placing Catholicism in pointed contrast with the doctrines of Protestantism. To each of these decrees, several canons, that is, anathemas against those who dissented from them, were added. In order to pay some attention to the wishes of the nation, strenuously supported by the emperor, the legates added some decrees, for the purpose of reformation, to those intended merely for the settlement of doctrines. The duties of preachers, and the administration of the inferior offices, from the bishops downwards, were more suitably arranged, without, however, radically attacking the prevailing abuses. Even by these half measures, the legates feared they had yielded too much; and, as the violent contentions between the prelates and the clergy of various orders, the bold assertions and proposals of the imperial envoys and German bishops, made the course of the deliberations continually more doubtful, and a speedy vacancy of the papal chair was anticipated, the legates made use of the false rumor of a pestilence in Trent, and, in accordance with a power long since received from Rome, in the eighth session, March 11, 1547, resolved upon transferring the assembly to Bologna, which was immediately followed by the departure of the Italian fathers. The solemn protestations of the emperor against this measure compelled eighteen bishops, from his states, together with the bishop of Trent, cardinal Madruzzi, to remain in that city, whilst the legates, with six archbishops, thirty-two bishops, and four generals of religious orders, contented themselves, at Bologna, in the ninth and tenth sessions, April 21 and June 2, with publishing repeated decrees of adjournment, without deciding further upon the subject of the council. The nominal council at Trent, in the mean time, held no session, and, as the emperor firmly refused to consider the assembly at Bologna as a council, and as the bishops departed, one after another, the pope at length declared, in a bull of Sept. 17, 1549, the council adjourned. After his death, the cardinal Del Monte, Feb. 8, 1550, ascended the papal chair, under the name of Julius III, and formally announced, at the desire of the emperor, the reassembling of the council of Trent in that very year. His legate, the cardinal Marcellus Crescentius, a man of a passionate temper, came with two nuncios to Trent, and opened the council, May 1, 1551, with the eleventh session. This second period commenced with little splendor, on account of the small number of prelates present; and even when the influence of the emperor had brought together the German archbishops, besides many Spanish, Italian and German bishops, in all sixty-four prelates, yet, on account of the deficiency of theologians, only the subjects of future deliberations could be decided upon in the twelfth session, Sept. 5, 1551. France kept back its bishops, as in the first period of the council, and presented, in this session, protestations against the continuation of it, by its envoy, James Amyot, on account of the then existing political contentions between king Henry and the pope. Nevertheless, the fathers proceeded in their work. The Jesuits Lainez and Salmeron, who had been sent as papal theologians, had a decisive influence upon the decrees, which now, laying aside scholastic differences, were briefly and precisely drawn up respecting the Lord's supper, penance, and extreme unction, and were published, the first with eleven canons, in the thirteenth session, Oct. 11, the two last, with nineteen canons, in the fourteenth session, Nov. 15. They added to this two degrees of reformation on the jurisdiction of the bishops, in which the limits of the episcopal authority, and the causes admitting of appeal to the pope, were determined, encroachments in foreign dioceses, and abuses in exercising the rights of patronage, and in the dress of the clergy, were prohibited; and the privileged ecclesiastical bodies, universities, monasteries, hospitals, &c., were exempted from the jurisdiction of the bishops. The canons, connected with the dogmatic decrees, contained only sentences in condemnation of the opinions of Luther and Zuinglius; and yet the pope had invited the Protestants, by several nuncios, to take part in this act of the council, as the emperor insisted on their admission. Some envoys of the Protestant powers appeared, indeed, at Trent; those of Brandenburg in order to obtain from the pope the confirmation of prince Frederic in the archbishopric of Magdeburg, those of Würtemberg, and deputies from the cities of Upper Germany, to please the emperor, and perhaps also at the instigation of the elector, Maurice, whose own envoy arrived there Jan. 7, 1552, and obtained an audience Jan. 24, in a general assembly. To his extreme vexation, the cardinal legate was obliged to consent, that the Protestant theologians also should be heard, and provided with safe conducts. In order to cut off every possibility of an agreement with the Protestants, he had composed a decree on the consecration of priests, entirely in the spirit of Gregory VII; yet the emperor gained his object, and, in the fifteenth session, Jan. 25, this decree was not published, but only a postponement of the deliberations was resolved upon till the arrival of the Protestant divines. Under the imperial protection, the divines of Würtemberg and Upper Germany (from the cities) now also came to Trent, and the Saxons were already on their way thither, under the conduct of Melanchthon. These measures, however, were only a stratagem on the part of Saxony, in order to lull the emperor into security, as was soon evinced by the sudden commencement of hostilities on the part of the elector, Maurice, who forced the emperor to fly, and the members of the council to disperse. They resolved, accordingly, in the sixteenth session, April 8, upon its adjournment for two years, without having even commenced negotiations with the Protestants. Amidst these circumstances, of the greatest disadvantage for the authority of the pope, the treaty of Passau, and the religious peace of Augsburg, were concluded, and two Catholic princes, the Roman king Ferdinand, and the duke of Bavaria, even ventured, at their own risk, to grant to their Protestant subjects the privilege of the cup, though the council had refused them permission so to do. In France, the increasing power of the Protestants threatened to extort similar, and still greater privileges; and because pope Paul IV (1555—59) would hear nothing of any council held without the city of Rome, the French bishops thought of summoning a national synod, for the settlement of the religious disputes. Paul's successor, Pius IV, saw himself compelled, in 1560 and 1561, to reassemble the general council. Although the Protestants did not accept the invitation, and the French government, rejecting the previous decrees of the council, demanded an entirely new and independent council, yet it was reopened, Jan. 8, 1562, by six legates of the pope, under the presidency of the cardinal, prince Hercules Gonzaga, of Mantua, with 112 bishops, mostly Italians, four abbots, and four generals of religious orders. In the eighteenth session, Feb. 26, a decree was merely published for preparing an index of prohibited books; but, in the nineteenth, May 4, and in the twentieth, June 14, it was again resolved to delay the publication of new decrees. This delaying was a common means of the Roman policy to avoid opposition; for France, as well as the emperor and Bavaria, repeated their propositions for the reformation of the church, and for the admission of the laity to the cup in the Lord's supper, the marriage of the priests, and a revision of the laws concerning forbidden meat; and, besides, all the bishops, except those from Italy, agreed in the opinion so odious to the pope, that the episcopal power and rights were not of papal but of divine origin. But, in consequence of the majority of the Italian bishops, the results of the votes were always in favor of the views of the Roman court. Thus there were passed, in the twenty-first and twenty-second sessions, July 16 and Sept. 17, 1562, the decrees respecting the celebration of the Lord's supper, and the sacrifice of mass, allowing preparatory explanations in the vernacular languages; but the laity were referred to the pope, as respected their demand for the cup in the Lord's supper. In these sessions, there were present 230 prelates, besides the ambassadors of the Catholic courts; and the number was increased, Nov. 13, by the arrival of the cardinal of Lorraine, with fourteen bishops, three abbots and eighteen theologians, from France, who not only gave new strength to the opposition, but also proposed thirty-four articles of reformation, which could not but be exceedingly offensive to the Papal party. This party, therefore, resorted again to delays, and postponed the next session from one month to another. Gonzaga, who was generally esteemed for his uprightness, but who was fettered in every step by the directions which he received from the Roman court, died meanwhile, March 2, 1563; and, in his place, the new legates Moroni and Stavageri presided, who amused the fathers with empty formalities and theological disputes, so that at length the imperial and French courts were convinced that no reformation of the church was to be expected from this council, and still less a peace with the Protestants, who entirely rejected the council. Moreover, the cardinal of Lorraine was won over to the Papal party by secret promises of personal advantage; and, although the German, Spanish and French bishops had hitherto zealously maintained the divine origin of their power, yet, at length, either tired out by length of time, or influenced by intrigues, they consented to a decree respecting the consecration of the priests and the hierarchy, entirely in accordance with the views of the pope, which received public confirmation in eight canons, in the twenty-third session, July 15, 1563. With equal pliability, they suffered to be passed, in the twenty-fourth session, Nov. 11, the decree respecting the sacrament of matrimony, in twelve canons, in which the celibacy of the clergy was enjoined; and, in the twenty-fifth and last sessions, Dec. 3 and 4, the hastily-composed decrees respecting purgatory, the worship of saints, relics and images, the monastic vows, indulgences, fasts, prohibition of certain kinds of food, and an index of prohibited books; the last of which, together with the composition of a catechism and breviary, was left to the pope. In the decrees of reformation, published in these last five sessions, which contained mostly insignificant or self-evident ordinances, or at least the same repeated only with different words, provision was made for the removal of the prevailing abuses, for the conferment and administration of spiritual offices and sinecures, &c. The most useful provision was that for founding seminaries for the education of the clergy, and the examination of those to be ordained. At the close of the last session, the cardinal of Lorraine exclaimed, "Cursed be all heretics!" and the prelates joined in the cry, "Cursed, cursed!" so that the dome resounded with their imprecations. Thus ended the council of Trent, the decrees of which, signed by 255 prelates, perpetuated the separation of the Protestants from the Catholic church, and acquired, with the latter, the authority of a symbolical book. The pope confirmed them, Jan. 26, 1564, in their whole extent. The chief object of this council, the gaining back of the Protestants to the Catholic church, was not attained, and the points of dissention between the Roman and the Greek churches were marked out so distinctly, as to leave no hope of any future reconciliation. By its decrees, the Catholic doctrines were more exactly determined, and many abuses remedied, though the worst and most pernicious were left. These decrees were received without limitation in Italy, Portugal and Poland; in the Spanish dominions they were restricted by the statutes of the kingdom; in France, Germany and Hungary, on the contrary, they met with an opposition which gradually resulted in a silent approbation of the doctrinal decrees on the part of the Catholics, but has always prevented the reception of the decrees of reformation, as irreconcilable with many laws of the respective countries, although the real improvements ordained were cheerfully received and put in execution. For the explanation and interpretation of the decrees of this council, Sixtus V, in 1588, instituted a council of cardinals, the continuation of which was found necessary by his successors. The works which have been written in support of, and opposition to, the council of Trent, the last that has been held, are very numerous, and many exhibit great talent. During the sessions of the council, Calvin wrote his antidote against the council of Trent, and, in 1560, when pope Pius VII ordered the reassembling of the council, the Lutheran princes of Germany issued their *Concilii Tridentini decretis opposita Gravamina*, and even down to recent times, works have continued to be written on it, though the notions of Protestants are now too well settled to induce them to spend much time in refuting its decrees. The fundamental error connected with this council was, that Catholics and Protestants could suppose it possible to reconcile their differences by means of a council, which could only bring them out in stronger relief. It was, in fact, the great mistake of the time to suppose that truth could be settled by religious disputations. But, though it is easy to see now that a union between the Catholics and Protestants was impossible, it was not easy to see it then; and we can hardly blame men for wishing to produce harmony in Christendom. Even at a much later period, men like Leibnitz believed in the possibility of a reunion of the churches.

Trenton; the metropolis of New Jersey, in Hunterdon county, on the east bank of Delaware river, opposite to the falls; ten miles south-west of Princeton, thirty north-east of Philadelphia, sixty south-west of New York, one hundred and sixty-seven from Washington, lat. 40° 14′ N.; lon. 74° 39′ W.; population in 1820, 3942; in 1830, 3925. It is the fourth town in size in New Jersey. It is pleasantly situated, and incorporated with city privileges. It contains the state and county buildings, and houses of worship for Presbyterians, Episcopalians, Methodists and Friends. The Delaware is navigable to this place for sloops, but is not navigable, except for boats of moderate size, above the falls. At the foot of the falls is an elegant covered bridge across the river. Trenton is distinguished, in the history of the revolution, for the victory gained by general Washington over the British army, on the 26th of December, 1776. The American army crossed the Delaware on the night of the 25th, during a violent storm of snow and rain, and attacked the enemy on the north and west parts of the town. A detachment of the army had been ordered to cross the river and secure a position at the bridge, to prevent the escape of the British troops; but, owing to the extreme difficulty of crossing the river, this part of the plan failed, and almost 500 of the troops escaped. The British lost 20, who were killed, and about 1000, who surrendered. The American loss was 2 killed, 2 frozen to death, 5 wounded.

Trepanning; the operation of opening the skull, by means of a surgical instrument, adapted for the purpose. The instrument used is called a *trepan*, or *trephine*, and consists of a handle, to which is fixed a circular saw, or hollow iron cylinder, of about an inch in diameter, called the *crown*, from the centre of which projects a sharp perforator, called the *centre-pin*. The upper part of the centre-pin screws into a hole at the top of the crown; its use is to steady the trepan before the teeth of the saw have made a sufficient furrow to prevent it from slipping; for which purpose it is pushed down below the level of the teeth of the saw, and fixed in the centre of the bone to be removed. The trephine differs from the trepan in having its crown fixed upon and worked by a common transverse handle, like a gimlet, instead of being turned by a handle, like a wimble or centre-bit, as is the case with the trepan. The former is used in England and the U. States: the latter is preferred by the surgeons of continental Europe. The trephine performs only a semicircular motion, imparted by the pronation and supination of the hand, the teeth being so arranged as to cut, whether the instrument is turned from right to left or the reverse. The trepan is turned completely round and round on its own axis. The operation is performed in the following manner:—The hair is first removed from the portion of the skull to be taken out, and incisions, in the form of a cross, or of the letter T or V, are made quite through the scalp, in order to expose the bone. The centre-pin is then fixed, the trephine or trepan is put in motion, as above described, and the operation is continued until the bone is sawn through, which is then removed by the forceps. The divided scalp is finally placed, as nearly as possible, in its natural situation, and dressed. The aperture in the skull gradually becomes closed with soft granulations, which slowly acquire a hard consistency. Until this is the case, the patient must wear a thin piece of horn, or plate of metal over the aperture. The operation of trepanning is resorted to only for the purpose of relieving the brain from pressure. Such pressure may be caused by the depression of a portion of the cranium, or it may be produced by an extravasation of blood, or by the lodgment of matter betwixt the skull and the *dura mater*, occasioned by a blow upon the head, or the inflammation of the membranes of the brain.

Tressan, Louis Elisabeth de la Vergne, count of, was born in 1705, at Mans, went at an early age to Paris, and became acquainted with Voltaire, Fontenelle, and other celebrated men, by whom he was confirmed in his love of literature. In 1723, he entered the army, and afterwards travelled in Italy. When the war broke out between France and Austria, he was appointed aid-de-camp to the duke de Noailles, with whom he was at the siege of Kehl. He also distinguished himself at Esslingen and Philipsburg, in 1734. In 1741, he was employed in Flanders. In 1744, he was made marechal-de-camp, and served at the sieges of Menin, Ypres, and Furnes. He was aid-de-camp to the king at the battle of Fontenoi, where he was wounded. In 1750, he was appointed governor of Toulouse and French Lorraine, and, soon after, made grand marshal to the ex-king of Poland, at Luneville, where he remained till the death of that prince. In 1781, he was admitted into the French academy, and took up his residence in Paris, where he died, October 31, 1783. He published a translation of the Orlando Furioso of Ariosto, which, together with extracts and translations of many other Italian and old French romances, appeared in *Les Œuvres Choisies de Tressan* (Paris, 1787—91, 12 vols., 8vo). He also wrote *Reflexions sur l'Esprit*; *Discours, prononcé à l'Acad. de Nanci*; *Eloges*, &c.

Treves (in German, *Trier*; anciently, *Augusta Trevirorum*); a city in the Prussian province of the Lower Rhine, capital of a government of the same name, formerly capital of an electorate and archbishopric, on the Moselle; lon. 6° 38′ E.; lat. 49° 47′ N.; population, 9608. It has a picturesque situation in the centre of a large valley lying along the Rhine, and open to the north-west and south-east, but confined on the other sides by gentle eminences covered with vines; and the environs abound with gardens. It contains the late elector's palace, now converted into barracks, a cathedral, nine churches, seven convents, three hospitals, a lyceum, and a public library. A university was founded here in 1454, but converted by the French, in 1794, into a central school, now styled a gymnasium. Treves is the most ancient, and among the most celebrated, cities of Germany. It contains many Roman antiquities: coins, medals and inscriptions are frequently dug up; and the remains of the baths are extensive. The archbishopric of Treves was the oldest in Germany; the archbishop was the second elector (q. v.) of the empire, and had the title of "arch-chancellor of the holy Roman empire, for Gaul and Arles." By the peace of Luneville (1801), Treves was annexed to France, but, since the peace of Paris, has belonged to Prussia. The gymnasium has a library of 70,000 volumes and 2000 manuscripts. Among the churches, that of Our Lady is one of the finest monuments of German architecture. The arch called the *black gate*, from its color, is the most important Roman monument in Germany.

Treviso, Duke of. (See *Mortier*.)

Trewes. (See *Highlands*.)

Triad (*three in one*). The number three was thought holy in the earliest antiquity. (See, for instance, Numbers xix, 12.) This must have its reason in the nature of the number. The number three represents to us unity and opposition, the principle and the moments of developement, or opposition, and the connecting unity (synthesis). It is the first uneven number in which the first even one is contained; herein lie its peculiar signification and perfection. Even in antiquity, it could not escape attention, that this number is to be found wherever variety is developed. Hence we have beginning, middle, end, represented in the heavens by rise, point of culmination, and setting; morning, noon, evening, and evening, midnight, morning; and in general, in the great divisions of time, the past, the present, and the future. In space, also, this number three occurs, as in above, midst, and below; right, midst, and left; and in general, in the dimensions of space, as length, breadth, and thickness or depth. To the eye, the number three is presented in the regular figure of the triangle, which has been applied to numberless symbolical representations; the ear perceives it most perfectly in the harmonic triad. (See the next paragraph.) As the triple is also the basis of symmetry, the three-figured form is found in architecture and in simple utensils, without any particular reference to symbolical or other significations. Of this kind are the triglyphs in architecture, the tripod, the trident, the three thunderbolts of Jupiter, the ancient three-stringed lyre; though the number three has in these objects, as well as in the three-headed Cerberus, other more symbolical relations. Even in our thoughts, we meet the triad in position (thesis), opposition (antithesis), and union (synthesis).

Triad, Harmonic; a compound of three radical sounds, consisting of a fundamental note, its third, and its fifth. Of these three sounds, the gravest is called the *fundamental*, the fifth the *excluded sound*, and the third the *harmonical mean*. This division of the fifth into two thirds is performed in two ways; first, harmonically; as when the greater third is lowest, in which case, the triad is said to be perfect and natural; secondly, arithmetically; when the lesser third is lowest; and then the triad is called flat or imperfect.

Trial. (See *Jury*, and *Process*, and Mittermaier's *German Penal Procedure, &c., compared with the English and French* (2 vols., Heidelburg, 1832).

Triangle, in geometry; a figure of three sides and three angles. Triangles are either plane or spherical. A plane triangle is one contained by three right lines; and a spherical triangle is one contained by three arcs of great circles of the sphere. Triangles are denominated, from their angles, *right*, *obtuse*, and *acute*. A right-angled triangle is that which has one right angle; an obtuse-angled triangle is such as has one obtuse angle; and an acute-angled triangle is that which has all its angles acute. The triangle is the most important figure in geometry; and its various lines bear the most interesting relations to each other. (See *Trigonometry.*)

Triangular Compasses are such as have three legs, or feet, whereby to take off any triangle at once; much used in the construction of maps, globes, &c.

Triangular Numbers are a kind of polygonal numbers, being the sums of arithmetical progressions, the difference of whose terms is 1. Thus, from the arithmetical numbers 1, 2, 3, 4, 5, 6, are formed the triangular numbers 1, 3, 6, 10, 15, 21.

Triangulating. In surveying, the larger the space the more complicated is the labor. A number of points are taken as the apexes of the angles of triangles, into which the space is supposed to be divided. This process is called *triangulating*. Triangles are chosen on account of the ease, with which, if some parts of these figures are given, the others can be calculated. In those surveys in which the spheroidal form of the earth must be taken into consideration, astronomical operations are necessary; accurate instruments are to be prepared for measuring angles, such as theodolites, reflecting sextants, &c. The longitude and latitude of places, at least 140 miles distant from each other, must be accurately determined, and their meridians must be marked on the ground. These points then form a network, to be afterwards filled up, and are supported by a great basis, obtained as well from accurate measurement as from trigonometrical calculations or careful triangulating. This basis is situated, if possible, in a meridian, and is astronomically determined. In each of the chief triangles, a system of smaller triangles is calculated; the whole is then divided into square sections, each of which contains some of the points trigonometrically ascertained in what we have called the *network*. These furnish the means of surveying in detail, and of examination.

Trianon; the name of two palaces near Vorsailles. Great Trianon (*le Grand Trianon*) has a front of 384 feet, and is remarkable for the beauty and luxuriance of its gardens, laid out by Lenôtre. The palace, built by Mansard in the Oriental style, is but one story high. At the end of the park of Great Trianon is *le Petit Trianon* (Little Trianon), which consists merely of a pavilion in the Roman style, with English gardens. This little palace was the favorite resort of Marie Antoinette, and was therefore exposed to the violence of the populace during the revolution. Great Trianon was much visited by Napoleon, and the decree of Aug. 3, 1810, was dated here. (See *Continental System.*)

Tribe (*tribus*). Romulus divided the inhabitants of Rome into three bodies, thence called *tribes*, each of which had a presiding officer (*tribunus*), and was divided into ten *curiæ*. Servius Tullius divided the inhabitants into four parts, which still retained the name of *tribes*. To these four city tribes (*tribus urbanæ*) were added the rural tribes (*tribus rusticæ*), the number of which was gradually increased to thirty-one. In the *comitia tributa*, in which the people voted by tribes, the lower magistrates, the ordinary magistrates, and the provincial magistrates, were chosen, laws were made, and criminal trials, not capital, conducted, &c.

Tribonian, a celebrated statesman under Justinian, a native of Side, in Pamphylia, was distinguished for his great learning, particularly in jurisprudence, which gained him the favor of the emperor, and raised him to the highest offices of state. He became questor of the palace and consul; but his vices made him obnoxious, and he was removed (532), in consequence of a sedition, but again restored to his former dignities. He was notorious for avarice and taking bribes; but his learning and ability preserved him the confidence of Justinian, who named him, with nine other civilians, to prepare the new *code*, with sixteen others to compose the *digest* or *pandects*, and with two others to draw up the institutes. (See *Civil Law.*) Tribonian was charged with being the secret enemy of Christianity, with atheism, and attachment to paganism; but these charges are not sustained by sufficient proof. He died 545.

Tribrachys. (See *Rhythm.*)

Tribunal, with the Romans; an elevated place where the pretor (q. v.) sat upon his *sella curulis*, when acting as judge: his counsellors sat near him. In the camp, the Roman general had also a tribunal of turf, where he gave judgment.

Tribunat. The French constitution of Dec. 15, 1799, projected by Bonaparte and Sieyes, committed the legislative power, though more in appearance than in reality, to a body (*corps legislatif*) of 300 men, and a *tribunat* of 100 members chosen by the conservative senate, from the three lists of candidates proposed by the departmental colleges. To the three consuls was reserved the right of initiating laws; to the *tribunat*, that of deliberating on subjects thus proposed, and to the legislative body that of accepting or rejecting measures thus proposed by the first, and discussed by the second. The members of the council of state, as the mouthpieces of the government, had a considerable influence in each body. The *tribunat* had also the privilege of expressing its wishes, and making representations to the government, and sometimes ventured to exercise this right. A *tribun* was to be twenty-five years old, and have a yearly income of 15,000 francs. The *tribunat* was renewed every five years, by the reëlection of one fifth of its members yearly. The last voice of freedom in the *tribunat* was Carnot's speech in opposition to the election of Bonaparte, as emperor, in 1804. By the *sénatus-consulte organique* of May 18, 1804, its general meetings were abolished, and it was permitted to meet only by sections, of which there were three (for legislation, home affairs, and finance). In 1807, the *tribunat* was suppressed.

TRIBUNE (*tribunus*), among the Romans; originally, the commander of a tribe (q. v.), thence a public officer, a commander in general. Thus there were military tribunes, and tribunes of the public treasury (*tribuni militares* and *tribuni ærarii*). The former commanded a division of a legion, consisting usually of about 1000 men; the latter assisted the questors, particularly in the distribution of money. The most important officers with this title were the *tribuni plebis*, or tribunes of the people (i. e. of the commons or plebeians), who were chosen from the plebeians to defend the rights of their order against the encroachments of the patricians. These tribunes were not, strictly speaking, magistrates, or invested with magisterial powers; but they exercised a great influence upon public affairs. The occasion of the creation of this office was the secession of the plebeians, on account of the oppression and injustice which they suffered from the patricians, to Mons Sacer, whence they refused to return into the city, till they had procured the consent of the senate to the creation of tribunes, whose persons should be inviolable, to protect their rights. They had the power of putting a negative upon the decrees of the senate, and of stopping the proceedings of magistrates by their *veto* (*I forbid it*); and in process of time their influence was increased to such a degree, that they often endangered the safety of the state. Their number was at first two, but was afterwards increased to ten; and as they were not dignified with the name of *magistrates*, they enjoyed none of the external marks of distinction which were attached to the magisterial dignities in Rome.

TRIBUNE, in the French houses of legislature; the pulpit or elevated place from which the members deliver their speeches, which they usually read, if they treat a subject at length. In general, only short replies are made *ex tempore*. Hence *tribune* is often used metaphorically. (See *Tribunal*.)

TRICOLORE. Whenever a great principle or interest, good or bad, brings large bodies of men into direct opposition, it is the common and natural course of things for some distinguishing cry or badge to be adopted by all those who espouse the same side; and the more active and absorbing the opposition is, the more significant becomes the sign. There is not time to give or receive long explanations: the questions will be, Are you whig or tory? patriot or royalist? a friend of the government or of revolution? Do you fight for the red or white rose? Do you wear the white riband on your sleeve? &c. These are the signs or watchwords in times of great excitement. Such a sign is the French *tricolore* (white, red and blue). It is the emblem of all who adhere to the principles of the new order of things in France, of all, whether monarchists or republicans, Bonapartists or Orleanists, who maintain the principle of equality, under whatever modifications. The white banner is the sign of the ancient aristocracy, the Bourbons, and represents the old order of things, under all modifications. The *tricolore* was adopted, originally, by accident, but has become a historical sign; and even if the elder line of the Bourbons could regain any permanent power in France, it could only be by adopting the *tricolore*; i. e. by yielding to the spirit of modern France, by becoming *national*. Bourrienne's Life of Napoleon contains some interesting facts respecting this badge. The *comte d'Artois* wore it in 1814. Fouché, in 1815, advised Louis XVIII to adopt it; but an intrigue prevented his so doing. "Why," said the king, when Fouché urged this measure, "should I change my badge for another?" "*Afin que personne autre que V. M. ne puisse le prendre*," answered the duke of Otranto. The first thing the duke of Orleans did, when he hastened to Paris, in the revolution of 1830, was to put on the *tricolore*. He gave a pledge by so doing, which was understood by all, and section 67 was immediately added to the constitution, which runs thus: *France resumes her colors: for the future, there will be no other cockade than the tricolored cockade.* This shows, that the *tricolore* is considered the emblem of France, in opposition to the *white*—the color of a family, the Bourbons, and, of course, all the interests attached to, and represented by, that family. The *tricolore*, according to the best accounts of the time when it was adopted, owes its rank, as a national color, to chance. In a moment of enthusiasm, the patriots had ornamented themselves with green leaves; and this color of hope was about to be retained as the badge of their party, when it was recollected that it was the color of the *comte d'Artois*, the most unpopular prince of the whole royal family. But a distinguishing sign was wanted; therefore the colors of the city of Paris, blue and red, were taken, and planted every where by the citizens. In the mean time, the national guard had been organized: it was not hostile to the king; and many military men having been, besides, incorporated with them, the white color of the Bourbons was added to the colors of Paris, and thus arose the famous white, red and blue ensign, which accompanied the French armies to Egypt, Spain and Russia. It may not be irrelevant to remark, that the colors composing the *tricolore* have been successively those of the French standard for many centuries. The most ancient national standard of France is what is now called *chape de Saint-Martin*, though probably it did not refer to the garment of the saint, but to the standard of his abbey. St. Martin of Tours was one of the first apostles of Gaul; and the religious banners of saints were, at early periods, assumed by the warriors, who commended themselves to their protection. This banner was blue, and became that of France. Probably about the beginning of the "third race" of kings, when the sovereigns resided permanently at Paris, St. Denis, the saint of Paris, became more important, and his banner was adopted as the common standard of the country. It is the famous *oriflamme* (q. v.): the color was red. During the crusades, the cross took the place of the flag; and we must often look for its color to find the national color of that period. The French cross was red, and the English white; and it is difficult to ascertain exactly the period when the interchange of colors between these two nations occurred. It is generally placed under Charles VII; but we find the white cross even under Charles VI. The change probably happened under Philip of Valois. At this period the English kings began to claim the sovereignty of France, and naturally adopted also the colors of France: they were, moreover, of the house of Lancaster, whose cognizance was the red rose. When the English were in possession of Paris, it was impossible for France to retain the red *oriflamme* as a distinguishing sign. Charles VII, moreover, wished to place France under the protection of the Virgin, whose emblem is often the white lily. Hence France adopted the white color; and the standard of that time was known under the name of *cornette blanche*. Other changes were made afterwards. The king of Navarre and the Calvinistic party wore white scarfs; and the king himself wore the color after he became Henry IV. But it seems that from time immemorial, a tricolored flag was the national banner, as contradistinguished from that of the monarchy. When the Dutch asked Henry IV to give them the colors of France, he gave them the tricolored standard, which has ever since remained the Dutch flag, as well as that of the kingdom of the Netherlands. It is, like the French, red, blue and white, only the colors are in a different order from those of France. The livery of Louis XIV was tricolored, blue, with white and red galoon lace. The vain Louis obliged his grandchild to take this livery with him to Spain, where it has descended to this day. The same was continued by the French descendants of Louis till the flight of Charles X. Louis also gave a tricolored livery to Philip of Orleans, red, with white and blue galoon lace. It is now the livery of the servants of Louis-Philippe. In the eighteenth century, when Spain, France and Bavaria concluded an alliance, a cockade was invented, to be worn by the armies of all three, in which the red of Spain, the white of France, and the blue of Bavaria, were united. As early as 1458, the colors of Paris were blue and red. Like many other things produced by the French revolution, the fashion of a national cockade was adopted by other nations; e. g. the Prussian is white and black; the Dutch orange, from the house of Orange; the Russian black and orange; the royal Saxon is green and white; and, by the natural influence of great examples, we find that the liberals of all countries on the continent have adopted a tricolored banner and cockade—the Germans, Italians, Poles, Belgians, &c. The

Germans have chosen the three colors of the ancient empire—black, red and gold. —For a historical investigation respecting the *tricolore*, see *Recherches Historiques sur les Trois Couleurs Nationales et le Coq Gaulois*, reprinted in the *Courrier des États Unis* (New York) of Nov. 27, 1830, and Jan. 1, 1831.

Trident. (See *Neptune.*)

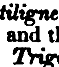
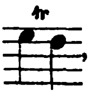
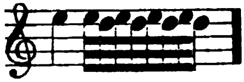
Triennial Act; the name generally given to the act of parliament, 16 Charles II, "for the assembling and holding of parliaments once in three years at least." This act was confirmed, after the revolution of 1688, by 6 William and Mary, c. 2. Under George I, the septennial parliaments were established. (See *Septennial Elections.*)

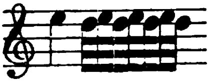
Trieste (anciently *Tergestum*; German *Triest*), a seaport of the Austrian dominions, in the kingdom of Illyria (q. v.), capital of a district of the same name, is an open town, and lies at the head of the gulf of Venice, on the bay called the gulf of Trieste, in lat. 40° 43′ N., lon. 12° 58′ E.; population, 40,530, consisting of a mixture of Germans and Italians. As it is the only seaport of Austria which has a convenient harbor, it has an extensive commerce. Among the exports are quicksilver from Idria and Hungary, linen and woollens, printed cottons from Switzerland, Hungarian and Dalmatian wines, &c. The imports are raw cotton (in 1831, 21,000,000 lbs.), coffee, sugar, spices, fish, indigo, &c. In 1830, 290 vessels entered the port, of which 140 were English, and 50 American.

Trifolium. (See *Clover.*)

Triglyphs. (See *Architecture.*)

Trigonometry; the art of measuring triangles. (q. v.) The meaning of the word, however, has been much extended, so that it embraces the determination of the situation and distance of all the points in a given space, in which the situation and distance of some points are given. The surveyor measures one or more lines and angles, and finds from these all the other points to be settled, by calculation. The great practical usefulness of trigonometry is obvious. If we imagine the various parts of the space to be surveyed connected by straight lines, besides the length of the lines and angles which they include, those angles also are to be considered which the various planes to which they relate make with each other. If the geometer has chosen some points of mountains, which, for the purpose of the survey, he considers as connected in triangles, they must, as they lie in various planes, be reduced to the horizontal plane; so that a plan may be drawn, on which all these various elevated objects shall appear in one plane. But if we consider the apparent celestial sphere, in the centre of which the observer seems to stand, the various points of the same may be regarded as connected by arcs drawn from this centre; and thus we shall have spherical triangles, as we had before plane ones, which again serve to ascertain the various points on the surface of the sphere. Trigonometry is divided into plane and spherical, and, in general, teaches to find, from three given parts of a triangle (of which, however, in plane triangles, one, at least, must be a side), the three remaining parts. How this is done we cannot show here.—See the articles *Sine*, and *Triangulating*. For further information, see Fischer's *Manual of Plane and Spherical Trigonometry* (in German, Leipsic, 1819)—a very practical book; Lacroix's *Traité élément. de Trigonométrie rectiligne et sphérique* (6th ed., Paris, 1813); and the great work of Cagnoli, *Traité de Trigonométrie rectiligne et sphérique*; Vince's *Treatise on Plane and Spherical Trigonometry* (Cambridge, 1800); Ingram's *Elements of Plane and Spherical Trigonometry* (1799, 8vo.); also the works of Playfair, Bonnycastle, &c. Respecting trigonometrical tables, see *Sine*, and *Logarithms*.

Trill, or **Shake** (in Italian, *trillo*), is, in music, the quick, uniform alternation of two adjoining tones or semitones. The beauty of this grace, in music, depends upon its being equal, distinctly marked, and moderately quick. The lower tone is the chief and essential tone, and supports the shake: it is therefore marked, in writing the notes, and with this the shake closes; for example,  The upper tone is the assistant one, and distant from the lower either a whole or a half tone. Whether a whole tone or only a half tone higher is to be taken, depends upon the key, and the place of the chief note. The whole tone is taken, if the chief tone belongs to a sharp key; the half tone if it belongs to a flat key, or is a lower leading tone. The general rule for the execution of a shake is to begin with the assistant tone, because thus the shake becomes clearer; hence , when executed, becomes 

yet there are some who execute it thus:  ; that is, they give the chief tone first. Several progressive shakes are called a *catena di trilli*. According to what we have said, it is a fault if, in a shake, the second tone is heard little or not at all. This is called by the Italians *tosse di capra*, or *goat's cough*, and happens when the singer continues to quaver on the same tone, or when the shake is narrower than the interval of half a tone. On instruments, the shake is much easier than for the voice. Some of the best singers have no shake; and, as it is merely an ornament, it is much better to omit it than to perform it badly. Some birds have an exquisite shake, as the lark and nightingale. To learn a shake, it is necessary to begin slowly, in order to hit the distance of the two tones precisely.

Trilogy; among the ancient Greeks, a union of three tragedies, connected in subject, which, together with a satirical piece, were performed in immediate succession. The trilogy in connexion with this satirical piece was called *tetralogy*. Every tragic poet who became a competitor for the prize at the feast of Bacchus, was obliged to produce such a tetralogy for performance. Such tetralogies of Æschylus were the *Orestias* and the *Lycurgia*. Mr. Welcker also assumes the supposition of a trilogy of Æschylus, in his *Prometheus*. But there is only one trilogy of antiquity which we can be certain of possessing complete, namely, the *Orestias* of Æschylus, which contains the *Agamemnon*, *Coëphori*, and *Eumenides*.

Trim; the state or disposition of the ballast, cargo, masts, sails, &c., by which a ship is best fitted for the purposes of navigation.

Trinidad; an island near the coast of South America, separated from Cumana by the gulf of Paria, which is about seventy-five miles broad. It is of an irregular square form, seventy-nine miles by fifty-six, and belongs to Great Britain. Lon. 60° 6′ to 61° 36′ W.; lat. 9° 48′ to 10° 42′ N. It is the largest, most fertile, and most beautiful, of all the Leeward islands, and was compared by Columbus to a terrestrial paradise. It is full of forest trees, and is situated out of the parallel of hurricanes, which have never as yet shifted so far to the south. The mornings and evenings in the island are delightful; the nights cool and refreshing, although the heat is great during the day; and the climate is healthy. Trinidad is capable of producing every article for the West India market, equal to any of the Windward islands. Here are several sorts of animals, plenty of wild hogs, fish, fowl and fruit. It also produces maize, cassava, and other roots, and, in general, all that is commonly found in America. The island of Tobago is separated from Trinidad by a channel called Trinidad channel. The chief town is Port of Spain. Population, 44,163; 24,006 slaves, 15,956 free colored, and 4201 whites. Exports to Great Britain, in 1829, £694,001; imports from the same, £361,077.—Trinidad (Spanish, *Trinity*) was discovered by Columbus, in 1498. After having been taken by Raleigh, in 1595, and by the French, in 1676, it was finally reduced by the British, in 1797, and was ceded to England by the peace of Amiens. Utensils, vases and pastes have been found here, which some have supposed to have been left by the Carthaginians.

Trinity. The doctrine of the Trinity, received by the greatest part of the Christian world, teaches that in the unity of the Godhead there are three persons, of one substance, power and eternity, the Father, the Son, and the Holy Ghost. The word *Trinity* does not occur in the Scriptures, nor in the Apostles' Creed, nor in the Nicene creed, but is found in the Athanasian creed (see *Creed*), in the following clause: "The Catholic faith is, that we worship one God in Trinity, and Trinity in unity, neither confounding the persons nor dividing the substance." (See *Antitrinitarians*, and *Unitarians*.) The former clause is directed against the Patropassian and Sabellian heresies, and the latter against the Ebionites, Cerinthians, Photinians, Arians and Macedonians. (See *Heretic*.)

Trinity College, or **Dublin University**, was founded by queen Elizabeth, in 1591. It has a provost, who receives £3000 a year, seven senior fellows, with about £1000 income, sixteen junior fellows, who are tutors, and whose income depends on their success, and seventy scholars. The students are divided into three classes, fellow-commoners, pensioners and sizars, about thirty in number, who receive their commons and instruction gratis. Roman Catholics and Dissenters are not excluded, as they are in England. (See *Dublin*, and *University*.)

Trinity House (London). The society of the Trinity was founded in 1515, for the promotion of commerce and navigation. It is a corporation, consisting of a master, four wardens, eight assistants, and thirty-one elder brethren, selected from commanders in the navy and merchant service; but, as a compliment, some of the nobility are occasionally admitted. They examine the children in Christ's hospital, and the masters of king's ships, appoint pilots for the Thames, settle the rates of pilotage, erect light-houses and sea-marks, hear and determine complaints of officers and men in the merchant service, and all business connected with the Thames, &c. The revenues of the Trinity house are supposed to exceed £150,000 a year, derived from light-house dues, pilotage, &c. The present Trinity house, on Tower hill, was built in 1795.

Trinity Sunday. (See *Sunday*.)

Trinity Term. (See *Terms*.)

Trinkamaly, or Trincomalee; a seaport of Ceylon, on the north-east coast, seventy miles north-east from Candy; lon. 81° 23′ E.; lat. 8° 31′ N. It is of greater extent than Columbo, but contains fewer houses and much less population. The harbor is one of the best and safest in the island, and, from its convenient situation, of great consequence to a maritime power.

Trio; 1. an instrumental piece of three obligato voices, or two chief voices and an accompanying bass, or of one chief voice and two accompanying parts. A trio is also called *sonata a tre*, and generally belongs to the class of *sonatas*. (q. v.) But it is not necessarily confined to three parts, as, e. g. if one part is for the piano, which, in a trio, is generally counted but one, though it plays at least two parts, as is the case in many trios of Beethoven, Ries, &c. 2. In a minuet (q. v.), *trio* signifies the passage which alternates with the proper minuet, and corresponds to it, and which, therefore, was formerly called *menuetto alternativo*, or the second minuet. It is generally written in the corresponding flat key, and was formerly written for three voices; hence the name.

Triolett; a stanza of eight lines, in which, after the third the first line, and after the sixth the first two lines, are repeated, so that the first line is heard three times; hence the name. It is cultivated by the French; less by the Germans; and is suited for playful and light subjects.

Tripod; a symbolical instrument in ancient Greece, which is first met with in connexion with the worship of Bacchus. It was also connected with the Delphian oracle, or worship of Apollo (see *Delphi*); in general, a symbol of prophecy, of divine authority and wisdom, &c., particularly at Delphi, Athens, Thebes, Dodona, where it was also used in music. Creuzer observes that the tripod, like the three-stringed lyre, contained an allusion to the three seasons of the primitive calendar. We frequently find it guarded by a griffin. In the age of Homer, and till the beginning of a freer period of art, about the fiftieth Olympiad, the tripod was used chiefly for sacred offerings, or for the prizes in the games connected with religious worship. Thus, Olymp. 48, 3, the first contest was celebrated, in which the victor received a wreath; at the same time the determining of the seven wise men took place, among whom, according to tradition, the tripod was passed round. The tripod was retained as a prize in the *Bacchanalia* to a late period. The traditions of robbed, or presented, or lost tripods, upon which are founded almost every where rights of dominion and other claims, are of the highest antiquity. Of the robbing of the tripod by Hercules, an interesting representation is given upon the *candelabrum* in the collection of antiques in Dresden. The eldest group of statues representing this subject (*Pausanias* XIII, 4) was a donation which the Phocians sent to Delphi, on account of a victory over the Thessalians. It consisted of large images of Hercules and Apollo contending for the tripod, and had on one side Minerva, on the other Diana and Latona. See Ottfried Müller's dissertation *De Tripode Delphico* (Göttingen, 1820, 4to.).

Tripoli; the most easterly of the Barbary states, in Africa, bounded north by the Mediterranean, east by Barca, south by Fezzan and the Desert, and west by Tunis. It consists chiefly of a line of coast extending about 800 miles in length, from lon. 11° 38′ E. to lon. 32° 30′ E.; square miles, about 190,000; population differently stated at from 1,500,000 to 2,000,000. (See *Barbary States*.) The pacha exercises despotic authority. He is nominally subject to the Porte; but the authority of that power is little regarded. The principal officers of state are the bey or generalissimo; the aga, who commands the Turkish troops; the kaya, or grand judge; the kadi, or religious judge; the kaids, or governors of provinces; and the first and vice-admiral. The naval force is small; the armed vessels not being supposed to exceed six, mounting from six to sixteen guns. There is no regular army; not more than five or six thousand men are often called out; but on emergencies, fifteen thousand have been assembled.—*Tripoli*, the capital, lies on the Mediterranean, 300 miles south-east of Tunis; lon. 13° 18′ E.; lat. 32° 54′ N.; population stated from 20,000 to 25,000. It is built in a low situation, on a neck of land extending into the sea. It is of great extent, but a large portion of the space included within the walls is unoccupied. The caravansaries, mosques, houses of foreign consuls, and of the higher ranks of the natives, are mostly built of stone. The lower ranks construct their houses of earth, small stones and mortar: they never exceed one story, and have flat roofs, which serve as a promenade. With the exception of those belonging to the foreign consuls, they have no windows to the street. Bazars occupy a considerable portion of the city, and are kept in excellent order. The chief monument of antiquity is a superb triumphal arch of marble, erected in the reign of Pius Antoninus. The harbor, though not very spacious, is safe, and will admit small frigates not drawing more than eighteen feet. The castle is an irregular square pile. The town is surrounded by a wall, flanked with six bastions: there are two gates: the batteries are mounted with about fifty pieces of cannon. The trade is chiefly confined to Malta, Tunis and the Levant. The city has a considerable portion of the caravan trade with the interior of Africa; and the exports consist of the productions of the country and articles from the interior.

Tripoli, or **Tarabolus** (anciently *Tripolis*); a city of Syria, and capital of a pachalic of the same name, seventy-five miles north-west of Damascus; lon. 35° 44′ E.; lat. 34° 26′ N.; population estimated at 16,000. It is situated at the foot of the branches of mount Lebanon, and along the edge of a small triangular plain, which extends between them and the sea. There is no harbor, but a mere road, defended against the action of the sea by small islands or shoals. The anchorage is neither safe nor convenient. The only fortification consists of an old citadel, a Saracen building, now useless. The plain is covered with mulberry trees, serving for the production of silk, the staple of Tripoli.—The *pachalic of Tripoli* comprises a great part of the ancient Phœnicia, and consists of the declivity of Lebanon, with the plain between it and the Mediterranean. (See *Syria*, and *Turkey in Asia*.)

Tripoli. (See *Clay*.)

Tripolitza; before the Greek revolution, the capital of the Morea, and residence of the pacha; at present, according to Anderson (Observations on the Peloponnesus), a heap of ruins, affording shelter to about 800 familes; thirty miles north-west of Misitra; lon. 22° 18′ E.; lat. 37° 25′ N. It contained several mosques and churches, with 12,000 inhabitants, chiefly Turks. In 1821, it was taken by storm by the Greeks under Colocotroni (see *Greece, Revolution of*), and became the chief city of free Greece, containing a Greek population of 30,000 souls. Ibrahim Pacha took possession of the place in 1825, and, in 1828, exasperated at the destruction of his fleet at Navarino, razed it to the ground, striking the first blow with his own hand. The walls were levelled, the citadel blown up, and the churches, khans and mosques demolished, and whatever was combustible was then destroyed by fire.

Trippel, Alexander, a very distinguished sculptor, was born at Schaffhausen, of poor parents, in 1747, and died at Rome in 1793, where he had lived since 1776. His works are distinguished by deep study of the antique, richness of imagination, accuracy of proportion, and the most delicate working of the marble in the naked parts.

Tripping; the movement by which an anchor is loosened from the bottom, either by its cable or buoy rope.

Triptolemus, in mythology; a son of Oceanus and Terra, or, according to some, of Trochilus, a priest of Argos. According to the more received opinion, he was son of Celeus, king of Attica, by Neæra, whom some have called Metanira, or Polymnia. He was born at Eleusis, in Attica, and cured, in his youth, of a severe illness, by Ceres, who had been invited into the house of Celeus by the monarch's children, as she travelled over the country in quest of her daughter. To repay the kindness of Celeus, the goddess took particular notice of his son. She fed him with her own milk, and placed him on burning coals during the night, to destroy whatever particles of mortality he had received from his parents. The mother was astonished at the uncommon growth of her son, and she had the curiosity to watch Ceres. She disturbed the goddess by a sudden cry, when Triptolemus was laid on the burning ashes; and, as Ceres was therefore unable to make him immortal, she taught him agriculture, and rendered him serviceable to mankind, by instructing him how to sow corn and make bread. She also gave him her chariot, which was drawn by two dragons; and in this celestial vehicle he travelled over the earth, and distributed corn to all the inhabitants of the world. In Scythia, the favorite of Ceres nearly lost his life; but Lyncus, the king of the country, who had conspired to murder him, was changed into a lynx. At his return to Eleusis, Triptolĕmus restored Ceres her chariot, and established festivals and mysteries in honor of the deity. He reigned for some time, and, after death, he received divine honors. Some suppose that he accompanied Bacchus in his Indian expedition.

Trismegistus. (See *Hermes Trismegistus.*)

Trissino, Giovanni Giorgio, an Italian poet and scholar, born at Vicenza, of a noble family, in 1478, devoted himself to study late in life. Demetrius Chalcondylas, whose memory he honored with a monument, was his first teacher in Greek. After the death of his first wife, he left his native city for Rome, where Leo X treated him with great distinction. That prince employed him in several honorable posts, and sent him on embassies to Denmark, the German emperor and Venice. Clement VII likewise sent him to the emperor Charles V, who received him with favor, and loaded him with marks of his esteem. Meanwhile, Trissino had married a second time, and his son by his first marriage had instituted a suit against him at Venice, which, being decided in favor of the son, deprived the poet of a great part of his fortune. Trissino accordingly left Venice for Rome, where he died in 1550. He acquired great reputation among his countrymen by his Sophonisba, the first modern tragedy composed after the rules of Aristotle (1515). On its first appearance, it was received with incredible admiration, as a revival of the old Greek dramatic spirit, and was exhibited under the patronage of Leo with great splendor. But this enthusiasm could not last, since Sophonisba was a cold imitation of antiquity, and foreign to the national taste. It, however, contains single scenes of merit, but, as a whole, is deficient in vigor, elevation and fire. This tragedy contains the first specimen of Italian blank verse (*verso sciolto*). Trissino attempted to compose an epic in a similar way, after the model of Homer and the rules of Aristotle. But his *Italia liberata dai Goti*, although apparently popular in its subject, was too poor in invention and originality to become a national epic. His lyrical poetry is more happy. He likewise wrote a treatise on the Art of Poetry, which displays much learning. The best edition of his works is that published by Maffei (2 vols., 1729).

Tristan d'Acunha; the largest of three islands in the South Atlantic ocean, about 1500 miles from any land either to the west or north, very lofty, and about fifteen miles in circumference. A part of the island towards the north rises perpendicularly from the sea to a height apparently of a thousand feet or more. A level then commences, forming what is termed *table land*, and extending towards the centre of the island; whence a conical mountain rises, not unlike, in appearance, to the Peak of Teneriffe, as seen from the bay of Santa Cruz. Lon. 15° 40′ W.; lat. 37° S.

Tritchinopoly, a town of Hindoostan, in the Carnatic, capital of a district, sixty-seven miles west of Tranquebar, one hundred and fifty-six south-east of Seringapatam, lon. 78° 50′ E., lat. 10° 48′ N., is advantageously situated on the south bank of the Cauvery, built on a hill or rock 350 feet high, surrounded by double walls flanked with towers, encompassed with a ditch, and was esteemed by the natives impregnable. It contains a palace, a mosque, and two magnificent Hindoo temples, has a strong garrison, and is the residence of the civil authorities of the district. It was taken by the British in 1751.

Trithing. (See *Ridings.*)

Triton; son of Neptune and Amphitrite; a sea god. In the war of the gods with the giants, he put the latter to flight by blowing his shell. Homer does not mention him, but Hesiod speaks of him as the *powerful*. He appears at first merely as the god of the Libyan lake Triton, but was afterwards represented as one of the inferior deities of the sea in general; and finally we find mention made of many Tritons, who were half man, half fish, and upon whom the Nereids rode.

Triumph. One of the most splendid spectacles of ancient Rome, and the highest reward of victorious generals, was the triumphal procession. The triumphs were of two kinds—the great triumph, and the ovation, or inferior triumph. Both could be celebrated only by order of the senate, with the consent of the people, and the former only by a dictator, consul or pretor, who had gained a victory over a foreign and free enemy, in a just war carried on under his command (*suis auspiciis*): it was likewise necessary that at least 5000 of the enemy should have fallen in open fight. According to the *lex Porcia triumphalis*, the general was required to appear, at the head of his army, before Rome (*ad urbem*), and present it to the senate, assembled in the temple of Bellona. The spectacle then began as soon as he had received permission to triumph from the senate and people. First, the triumphing general, in his triumphal robes, bearing a laurel branch in his hand, distributed, in the presence of the assembled people, money, marks of honor, bracelets, lances and garlands among his soldiers. The whole senate then went out to meet the victor, who, being seated in a gilded chariot, usually drawn by white horses, clad in a purple tunic (*tunica palmata*) and an embroidered toga (*toga picta*), crowned with a laurel wreath, and bearing an ivory sceptre, with the eagle, in his hand, moved, with the procession, from the *campus Martius* through the streets, decorated with festive ornaments, to the capitol. Singers and musicians preceded, followed by choice victims, highly adorned, by the spoils, by the emblems of the conquered provinces and cities, and, finally, by the captive princes or generals, in chains. Next came the victor (*triumphator*), followed by his relations and friends, and a long train of citizens, in festal garments, and uttering acclamations. Lastly followed the victorious army, on foot, and on horseback, crowned with laurel, and adorned with the marks of distinction which they had received, shouting *Io triumphe*, and singing songs of victory, or of sportive raillery. It was an old and touching custom for a slave to stand close behind the triumphing general, bearing a gold crown set with precious stones in his hand, and repeating to him the solemn words, "Remember that thou art a man!" Upon the capitol, the general rendered public thanks to the gods for the victory, caused the victims to be slaughtered, and dedicated the crown and a part of the spoils to Jupiter. He then gave a great feast, and, in the evening, the people accompanied him home with torches and acclamations. It is not, therefore, to be wondered at, that every Roman aspired to the honor of a triumph, and considered it the highest distinction to be esteemed worthy of it. A commander who had gained a victory at sea, was honored with a naval triumph (*triumphus navalis*). Duillius was the first who received that honor, in consequence of his victory over the Carthaginians. Those who had once triumphed (*viri triumphales*) continued to enjoy some marks of distinction, such as a place of honor on public occasions, &c. In the ovation (so called, as is supposed, from *ovis* (sheep), because a sheep was sacrificed on the occasion), the general entered the city on horseback or on foot, wore a *toga prætexta*, and was crowned with myrtle. It was celebrated with less pomp than the triumph, and was granted when the victory was not of the kind prescribed as worthy of a triumph. From the time of Augustus, few triumphs were celebrated, and those only by the emperors: to the private generals trophies were given.

Triumphal Arch; a monument consisting of a grand portico or archway, erected at the entrance of a town, in its principal street, upon a bridge, or in a public road, to the glory of some celebrated general, or in memory of some important event. Several triumphal arches appear to have been erected with the double purpose of serving as monuments to the glory of the chieftain whose name they bear, and as gates of the town to which they belong. The invention of these structures is attributable to the Romans. The earliest specimens are destitute of any magnificence. For a long time, they consisted merely of a plain arch, at the top of which were placed the trophies and the statue of the triumpher. Subsequently, the span was enlarged, the style enriched, and a profusion of all kinds of ornaments heaped on them. The triumphal arches varied greatly in point of construction, form and decoration. Those existing at the present day are of three very distinct species:—First, those which consist but of a single arch, such as that of Titus at Rome, of Trajan at Ancona, &c.; secondly, those which are formed of two arches or arcades, such as those of Verona, &c., which appear to have formed, at the same time, gates for the town; thirdly, the species composed of three arcades, the centre being the principal or grand arch, and the others at each side much smaller. The arch known to us as that of Constantine is the best preserved of all the great antique arches. The arch of Septimius Severus, placed at the foot of the Capitoline hill, and also partly buried, greatly resembles that of Constantine. The arch of Titus is the next most considerable in Rome, after these two. The arch of Benevento, erected in honor of Trajan, is one of the most remarkable relics of antiquity, as well on account of its sculptures as its architecture. The arch of Trajan, at Ancona, is likewise one of the most elegant works of ancient architecture. The arch of Rimini, erected in honor of Augustus, on the occasion of his repairing the Flaminian way, from this town to Rome, is the most ancient of all the antique arches, and, for its size, one of the noblest existing. Many beautiful structures of this kind have been erected in modern times, but principally on the plan, and in imitation of some one of those above mentioned. Ancient medals often bear figures of this species of architecture; and some of them represent arches which have for centuries past ceased to exist.

Triumphal Column. (See *Column.*)

Triumvirate; an office administered by three men (*triumviri*). When Cæsar was murdered, Antony, Octavius and Lepidus received power to restore order in the state: they were called *triumviri reipublicæ constituendæ*, and their office the *triumvirate*. (See *Augustus.*) The coalition between Cæsar, Pompey and Crassus, is also often, but improperly, called a *triumvirate*, as it was merely a union or conspiracy of three private men, without the public sanction.

Trivium; the name given, in the middle ages, to the first three of the seven liberal arts—grammar, rhetoric and logic. The other four, consisting of arithmetic, music, geometry and astronomy, were called the *quadrivium*. (See *Schools.*)

Troad, or Plain of Troy; a tract in the north-west part of Asia Minor, to which this name has been applied by modern Europeans, and which included the ancient city of Troy. It now contains no great cities, no grand features of nature, nor even any ancient monuments of extraordinary magnitude. The peculiar interest excited by it depends on its being the scene of events celebrated in the immortal verse of Homer. The subject, however, is enveloped in mystery, and it is impossible to identify, with certainty, the various objects mentioned by the poet. The most learned travellers and inquirers, Chandler, Wood, Chevalier, Bryant, Gell, Clarke, Hobhouse, &c., differ widely in their conclusions. Bryant denies not only that any spot can be identified as Troy, but that there was ever such a place as Troy, or such an event as the Trojan war. Other writers have endeavored to place Troy in a position farther to the south, and on the shore of the Ægean sea. But the general opinion seems now fixed upon that part of the coast of Asia Minor which lies immediately without the narrow sea, anciently called *Hellespont*, and opposite to the island of Tenedos. Every trace of ancient Troy being obliterated, its site can only be guessed by the relative position of the natural objects alluded to by Homer. Here is a plain of considerable extent, watered by several streams, behind which rises a chain of mountains, called by the Turks *Kazdaghi*, but which correspond to the *Gargarus* and *Ida* of Homer. Of the streams, the most considerable is the *Mender*, supposed to be the ancient *Scamander*. A rivulet which flows into the Mender on the east side, called *Callifat Osmack*, is thought to be the ancient *Simois*. The *Thrymbrek*, a larger river, which flows much farther eastward, and joins the Mender at its mouth, is supposed to be the ancient *Thymbrius*, though some take this to be the Simois. Various ruins are found in different parts of the plain, as remains of a citadel, of temples, tumuli, fragments of pottery, terra cotta, medals, &c. The city of Troy (Troja), more properly *Ilios*, or *Ilium*, was situated upon an elevated spot between the Simois and the Scamander. Fable relates, that the name was derived from Tros, son of Ericthonius, and father of Ilos. Paris, son of Priam, one of his successors, having carried away Helen, gave occasion to the Trojan war, which was terminated, after ten years, by the destruction of the city by the victorious Greeks, probably about 1184 B. C. The citadel of Troy was called *Pergamos*, which name is sometimes given to the city.

Trochee. (See *Rhythm.*)

Trochilus. (See *Humming Bird.*)

Troglodytes (from τρωγλη, cave, and δυνω, to enter); individuals or tribes who live in subterranean caverns. The ancients mention some tribes of troglodytes in Asia, Æthiopia and Egypt, but give little information concerning them. *Troglodytes* is also the name of an ancient heretical sect, who, rejected by all parties, were forced to hold their meetings in caves. Certain Jews who were accused of practising idolatry in secret, have also been termed *troglodytes*. In natural history, *troglodyte* is the scientific name of the chimpanzee (see *Ape*), and of a species of wren.

Trois Rivieres, or Three Rivers; a town of Lower Canada, and capital of a district of the same name, at the entrance of the St. Maurice into the St.

Lawrence; 84 miles above Quebec, 96 below Montreal; lat. 46° 23′ N.; lon. 72° 29′ W.; population, about 3000. It derives its name from the circumstance that two islands near the mouth of the St. Maurice divide it into three channels, and give it the appearance of three rivers. The town stands on a light, sandy soil: the houses are generally mean, and the trade of the whole country centres in Montreal and Quebec. It was formerly the capital of the French government of this country.

Trollhatta. (See *Cataract*, and *Canal.*)

Trombone, or **Trombono.** Of this instrument there are three kinds—the bass, the tenor, and the alto. The bass trombone begins at G gamut, and reaches to C above the bass-cliff note, producing every semitone within that compass. The tenor trombone begins at A, one note above G gamut, and produces all the semitones up to the fifteenth above. The alto trombone begins at C above G gamut, and produces every semitone up to the fifteenth above. This powerfully sonorous instrument is by some esteemed extremely useful in grand choruses and other full compositions; but many acknowledged judges think it more powerful than musical.

Tromp, Martin Harpertzoon, one of the most celebrated Dutch naval officers, was born at Briel, in 1579. In his eighth year, he was placed by his parents on board a vessel in the East India trade. While very young, he was made prisoner by an English privateer, and had an opportunity of learning, in his new service, all the arts of petty naval warfare. Some years after his return to his country, he was captured by the Turks, in the Mediterranean sea, from whom, however, he escaped. He subsequently entered the service of the states-general, accompanied the celebrated admiral Peter Hein, whose favorite he became, in all his enterprises, and was fighting by his side when Hein was killed. He became, in 1639, admiral of Holland, and, upon the information that a Spanish fleet of ten ships of the line, four frigates, and several small vessels, had gone out of Randyk, he followed them, and took and destroyed five ships of the line, together with the frigates. In October of the same year, in connexion with admiral Cornelitzoon de Witte, he attacked the powerful Spanish fleet under Oquendo, in the Downs, which was assisted by the English, and obtained a great victory. Oquendo's own ship would have sunk had not Tromp generously sent a frigate to his assistance. This victory made his name famous throughout all Europe, and the king of France conferred on him a title of nobility. In 1652, hostilities commenced between Holland and England, and Tromp and the English admiral Blake fought in the Downs: the Dutch fleet sustained some loss, and was compelled to retire. Soon after, Blake having taken some ships engaged in the herring fishery, Tromp received orders to attack him; but a violent storm dispersed his fleet, just as the signal for attack was given, so that he returned to port. This misfortune, although Tromp was not to blame, gave occasion to the government to dismiss him and appoint De Ruyter in his place. Nevertheless, the chief command was again intrusted to him in the same year, and, November 29, assisted by Evertzoon and De Ruyter, he defeated the English fleet, which lay, under Blake, in the Downs, so that it was compelled to retire into the Thames, with the loss of five ships. Upon this occasion, Tromp, in the spirit of a true sailor, caused a broom to be fastened to his mast-head, as a sign that he would sweep the channel of the English ships. About the close of the year, he entered a Dutch port with a large fleet of merchantmen, and received the thanks of the states-general. In 1653, Tromp and De Ruyter, accompanied by a great number of merchant vessels, were attacked by the united fleets of Monk, Dean and Blake: both fleets were very strong, but the English were superior. An action of three days' continuance followed, in which the Dutch lost eleven ships, but retired in good order, and carried their convoy home. Tromp, who suffered no diminution of reputation on this occasion, was sent out to convoy another fleet of merchant vessels, which he carried to the northern coast of Scotland, without losing a single one. He afterwards attacked, in June, the English fleet under Monk, Dean and Lawson, near Newport, but was compelled to retire to Welingen, with considerable loss. He and De Ruyter saved one another, upon this occasion, from imminent danger. After obtaining additional supplies of ships and men, Tromp sailed, with eighty-five vessels, towards the coast of Zealand, where he came upon the English fleet of thirty-four ships. A storm delayed the attack; but, August 6, 1653, having been strengthened by the arrival of De Witte, so that his fleet amounted to

120 vessels, the battle began, between Scheveningen and the Meuse. The first day, nothing decisive was effected. On the second day, Tromp, according to his usual custom, broke through the enemy's line, but was soon surrounded, and was not supported by his own fleet. He fought desperately in order to escape, till he fell, pierced by a musket-ball. "Courage, my boys," exclaimed he, expiring; "my course is ended with glory." Every effort of De Ruyter and the other officers, after the news of his death, to keep up the courage of the Dutch sailors, was in vain, and the English obtained a dear-bought victory. Tromp is said to have been victorious in thirty-three naval actions. He had desired to die in the service of his country. His body was interred, with splendor, in the church at Delft, and a magnificent monument erected to his memory. The state caused medals to be struck in honor of him, and sent a solemn deputation to his widow, to assure her of the public sympathy.

Tromp, Cornelius, the second son of the preceding, born 1629, commanded a ship, in his nineteenth year, against the African pirates, and, two years later, was made vice-admiral. In 1665, in the war between England and the United Provinces, he was present at the battle of Solebay, where the Dutch fleet was defeated, and the ship of admiral Opdam blown up. The masterly retreat of Tromp allowed the victors to reap but little advantage from their success. His conduct and courage gave him a reputation little inferior to that of his father; and, like him, he was devoted to the Orange party. On this account, De Witte, although politically opposed to him, thought it advisable to appoint him to the chief command of the fleet, during the absence of De Ruyter. After De Ruyter's return, Tromp refused to serve under him, but was forced to submit. In the battle, which lasted four days, in the Downs, July, 1666, he showed equal courage and ability, without being so fortunate as De Ruyter. In August of that year, while he was pursuing, with too much ardor, an English fleet which he had defeated, he was cut off from the main body of the Dutch fleet, and was thus prevented from going to the assistance of De Ruyter, who was therefore compelled to retire. Tromp brought his own fleet, with little loss, into the Texel, but, upon De Ruyter's complaint, was deprived of his command. In 1673, however, when the war between Holland and the united kingdoms of England and France broke out, Tromp was again taken into the service, and was entirely reconciled to his rival De Ruyter. In this war, he distinguished himself by many victories over the English. In 1675, after the peace, he visited England, where he was received with the greatest honor, and made a baronet by Charles II. In the same year, he was sent with a fleet to Copenhagen, to assist Denmark against the Swedes, and was invested by the king of Denmark with the order of the Elephant. After De Ruyter's death, he succeeded him as admiral lieutentant-general of the United Provinces, remained, during the war, in the Danish service, and had a great share in the conquests of this crown in the north. In 1691, on the renewal of the war between Holland and France, he was appointed to the chief command of the Dutch fleet, but very soon after died, at Amsterdam, May 29 of that year, and was buried in the splendid tomb of his father.

Trona. (See *Soda.*)

Trope (from the Greek τροπος, turn); an expression used in a different sense from its ordinary signification, for the sake of presenting an idea in a lively and forcible manner. As the change of expression made by the trope affects immediately the chief idea of the sentence (for instance, when we say, instead of "This cunning deceiver will ruin us," "This old fox will ruin us"), tropes differ from figures of speech. Tropes are as old as the application of language to invisible things. The want of means to designate conceptions obliged men to apply the names of sensual objects, often from very obscure principles of resemblance, to intellectual subjects. Every language possesses many words, borrowed in this way, which have by degrees lost their original meaning, such as *spirit*, *conception*, &c. "Therefore," says Jean Paul, "every language, in respect to intellectual relations, is a dictionary of faded metaphors." But, as these metaphors become abstract, the want of new tropes is felt. And even tropes which do not actually become mere abstract terms, lose their force by constant use, as when a great statesman is called a *pillar of the state.* "With every century," says Jean Paul, in his *Vorschule zur Aesthetik*, div. 2, "some field of poetical flowers loses its freshness, and becomes dead matter;" and lively tropes become more and more rare with the progress of time, because, though changes of circumstances afford opportunities to make new ones, yet the best, that is, the simplest, have been worn out, and every writer is therefore obliged to omit the use of numerous tropes, which his imagination suggests. Writers disagree as to the various kinds of tropes, some reckoning more, some fewer sorts. Quintilian complains of this vagueness, and attempts a new division, but without much precision. Adelung reckons only the metonymy, synecdoche, and metaphor, among the tropes; but this enumeration seems to be too restricted. More modern writers add the allegory and prosopopœia, or personification, which certainly have the character of tropes.

Trophies (*τροπαια*); monuments in commemoration of a victory, formed of captive arms, or, in a more general sense, all memorials of victory. The ancients usually erected them upon the spot where they had gained a victory. In the earliest times, the Greeks were accustomed to hang up the arms taken from the enemy, or the spoils, upon an oak or an olive tree, in such a manner as to imitate the appearance of an armed man. From the nearest tree, most of the branches were lopped off, a few being left, upon which were fixed swords, shields, spears, &c. Upon the top was placed a helmet, and around the trunk, a cuirass or breast-plate. The trophies were, at a later period, also formed by erecting wooden frames, upon which the spoils were suspended, as the Greeks were unwilling to render the memorials of hostility permanent. At a still later period, they were formed of bronze and marble, or even of gold; and they were often the subjects of medals. In these, the emblem of the conquered province or town was sometimes represented in a mourning posture, under a tree, with some inscription, indicating the victory. Similar representations were also made upon altars. An inscription was also sometimes placed upon a votive shield, to perpetuate the victory. At triumphs, it was usual to bear trophies before the triumphant general.

Trophonius, a celebrated architect, son of Erginus, king of Orchomenos, in Bœotia. He built Apollo's temple at Delphi, with the assistance of his brother Agamedes, and, when he demanded of the god a reward for his trouble, he was told by the priestess to wait eight days, and to live, during that time, with all cheerfulness and pleasure. When the days were passed, Trophonius and his brother were found dead in their bed. According to Pausanias, however, he was swallowed up alive in the earth; and when, afterwards, the country was visited by a great drought, the Bœotians were directed to apply to Trophonius for relief, and to seek him at Lebadea, where he gave oracles in a cave. They discovered this cave by means of a swarm of bees, and Trophonius told them how to ease their misfortunes. From that time, Trophonius was honored as a god: he passed for the son of Apollo; a temple and a statue were erected to him, and sacrifices were offered to his divinity, when consulted to give oracles. The cave of Trophonius became one of the most celebrated oracles of Greece. Many ceremonies were required, and the suppliant was obliged to make particular sacrifices, to anoint his body with oil, and to bathe in the waters of certain rivers. He was to be clothed in a linen robe, and, with a cake of honey in his hand, he was directed to descend into the cave by a narrow entrance, from whence he returned backwards, after he had received an answer. He was always pale and dejected at his return; and thence it became proverbial to say of a melancholy man, that he had consulted the oracle of Trophonius. There were annually exhibited games in honor of Trophonius, at Lebadea.

Tropical Year. (See *Year*.)

Tropics, Tropical Regions. The tropics are those points of the ecliptic in which the sun, having reached his highest southern or northern declination, turns back (Greek, *τρεπω*, to turn), and begins to approach the equator, from which he had been, for three months, receding. The imaginary circles drawn through these points, parallel to the equator, are distant from it 23° 30′, and are also called *tropics* or *tropical circles*. The northern tropic, cutting the ecliptic in the constellation Cancer, is called the *tropic of Cancer*; and the southern, cutting the same circle in the constellation Capricorn, is called the *tropic of Capricorn*. The part of the globe included within these limits, twenty three degrees and a half each side of the equator, and, consequently, forty-seven degrees of latitude in breadth, is called the *torrid zone*, or, to avoid the error of implying, that it is universally scorched by burning heats, *tropical regions*. As a great part of the tropical regions known to us is formed of insular or mountainous countries, the heat is much less excessive than was formerly represented, and is even now generally supposed. (See the articles *Climate*, *Temperature*, and *Mountains*; consult also Humboldt and Bonpland's *Tableau physique des Regions Équinoxiales*, and Humboldt's *Views of Nature*.)

Troppau, a principality, which has belonged, since 1614, to the house of Lichtenstein, is situated partly in Prussia, partly in Austrian Silesia. The Prussian part contains 54,500, the Austrian 76,000 inhabitants. In the latter is situated the capital, Troppau, on the Oppa, with 8300 inhabitants, exclusive of the 3000 inhabitants of Katharinendorf, which is connected with the city. Troppau is famous for the congress held there from Oct. to Dec., 1820, in which the assembled monarchs, the emperors of Austria and Russia, and the king of Prussia, announced the principle of armed intervention. (q. v.) The revolutions of Spain, Portugal, and Naples, gave occasion to this congress. The protocols were drawn up by Gentz. (q. v.) The object of the deliberations was to effect a compact between the great powers, that they would not acknowledge any constitution which should deviate from the legitimate monarchical standard. But England and France endeavored to establish the system of neutrality, the reasons for which were stated in a note of lord Stewart. Great Britain expressed her unwillingness to take part in any measure of violence against Naples, and France would join the league only upon certain conditions, which, however, were refused by Austria, Russia and Prussia, as these powers were resolved to use force to put down the revolutionary spirit. The king of Naples was invited to proceed to Laybach (q. v.), in order to act the part of mediator between his people and the governments, whose quiet was endangered by the revolution in Naples. The king of France joined in the invitation, and Ferdinand I left Naples, Dec. 13, with the consent of the Neapolitan parliament. He arrived at Laybach in January. It had been further resolved at Troppau, that in case a war should actually break out with Naples, Austria should carry it on alone, whilst Russia and Prussia pledged themselves to keep watch on the rest of Europe, and guarantied the security of the Austrian states. The monarchs also disclaimed all ideas of conquest or of injury to the independence of other states. The first work written against the congress of Troppau was Bignon's *Du Congrès de Troppau*.

Trosachs. (See *Loch Katrine*.)

Trotzendorf, Valentine Friedland, the most distinguished schoolmaster of his time, of whom Melanchthon said, "*quem ad regendas scholas non minus natum, quam ad regenda castra Scipionem olim Africanum puto*" (Decl., vol. v., p. 817), was born probably in 1490, in Trotzendorf, in Upper Lusatia. His father was a poor peasant, and Valentine learned to write on the bark of birch, with ink made of water and soot. By great efforts, he was enabled to study in Leipsic, where he became master of arts in 1515. He instructed the rector of the university in the elements of Greek. In 1518, he went to Wittemberg, and, being too poor to pay a Jew for teaching him Hebrew, he became his servant, to enjoy his instruction. In 1531, after having gone through many changes, he became a second time rector of the school at Goldberg. For thirty-three years he conducted this school with great faithfulness and talent. Pupils came to him from Poland, Lithuania, Austria, Bohemia, Hungary, Transylvania, Germany, &c.; and it is said that he used sometimes to salute them, on entering the school in the morning, thus: "Good morning, ye noble lords, ye imperial, royal and princely counsellors, ye burgomasters and magistrates, mechanics, artists, merchants and soldiers, good for-nothings though you be." He had sometimes above a thousand pupils and used the members of the upper classes to teach the lower ones. He instructed his scholars in the principles of religion, in Latin, Greek and Hebrew, rhetoric, history, dialectics, gymnastics and music. "Learn to sing, my dear boys," he would say, "and, then, if you go to heaven, the angels will admit you into their choir." His institution was a republic, with the forms of Roman government, at the head of which he stood. He was assisted by two consuls, two censors, and a senate of twelve members, with whom he decided important affairs. Each class had a questor, &c. He died in 1556, at Leignitz. He was grave, kind, strict, just, active, learned, benevolent, moderate, and pious; one of the best and most successful teachers that ever lived, and revered by his pupils, who were so numerous, that he used to say, "Could I but collect all my pupils, I could easily beat the Turks." His memory was extraordinary.

Troubadours. The most beautiful period of the middle ages produced, in the south of Europe, the singers and poets called *Troubadours*. The name is derived from the French word *trouver*, and marks the ease of their poetry, as if in opposition to the elaborate compositions of the Greek ποιητης. The proper home of the Troubadours was France, part of Upper Italy, and, for some time, the kingdoms of Catalonia and Arragon; and their flourishing period extends from the tenth century to the middle of the thirteenth. In this period, corresponding to the heroic era of Greece, after the migrations of the tribes under Pelasgus and Danaus, chivalry arose, and spread all over Europe, giving birth, in the different countries, to poetry as diversified as the forms of the chivalric character from which it sprung. Thus originated the productions of the minnesingers in Germany, the lofty poetry of the north, the ballads of Spain, the songs of the Troubadours and trouvéres in France, and those of their brethren, the minstrels, in England. The life of the nobles, at this period, in all the Christian lands, was a scene of hazardous and romantic exploits, favorable, in a high degree, to poetry. But their poetry was necessarily unpolished, the genuine growth of nature and of the genius of the times. In different countries, indeed, it assumed different shapes, but its nature and spirit is one and the same. Through the whole of the middle ages, France was divided by the Loire into two distinct countries, the provinces of the *Langue d'oui*, or *Langue d'oïl* (Walloon Romance), and of the *Langue d'oc* (Provençal Romance). The difference of these two, as shown in their political constitutions, and their history, appears also in their poetry. The trouvéres of Northern France, in England called also *minstrels* (q. v.), who cultivated the Walloon Romance, the mother of the modern French language, were the epic poets of France, whose songs and chivalrous romances described the fabulous exploits of the knights of the Round Table, of Amadis, and of Charlemagne, with his peers. They proceeded chiefly from the duchy of Normandy, founded by Rollo, spread over France and England, and flourished from the twelfth century till the rise of the modern French literature. They confined themselves to the reasoning, narrative style, which still prevails in France. The beautiful shores of Provence, Languedoc, and Guienne, together with Gascony, had earlier become susceptible of civilization, through their intercourse with the Romans; and the victorious German tribes found in these regions much stronger inducements to exchange their savage life for gentler manners than in the north of France. Less isolated than Spain, these provinces shared with that country all the luxuriance of the south. Rich pastures, with the finest productions, romantic valleys and hills in the fertile Cevennes, a long extent of coast on the Mediterranean sea, give loveliness to the country, and a gay, pleasure-loving character to the inhabitants. Their chivalry was naturally different from that of Spain or of the north; more gallant than the latter, and softer and brighter than the former, and was prone to show and festivity. The storms which raged in France under the Merovingian and Carlovingian races, till Hugh Capet, in 987, possessed himself of the throne, were scarcely felt in the secluded south, and Burgundy alone served to connect the Provençal regions with France in the stricter sense. In Aquitaine, as well as in Languedoc, Provence, Burgundy, Auvergne, &c., the power of the great barons, dukes and counts was more and more developed, while the authority of the king declined. They not only made their own dignity hereditary, but encroached continually on the royal territory. About 1071, the famous Troubadour William IX, count of Poitou, celebrated by Tasso under the name of Raymond de St. Gilles, was duke of Aquitaine. In 1151, it fell to Henry II (Plantagenet) of England. In Languedoc, during the ninth century, the counts of Toulouse and the counts of Provence reigned together, and, in the eleventh, Raymond de St. Gilles and Alfonso II of Arragon. Provence made itself independent under Louis the Stammerer. The duke of Burgundy, Boso, was crowned, in 879, king of Provence; and this kingdom was called the *Arelat*, from its capital, Arles. Lower Burgundy, which is also highly important in the history of the Troubadours, enjoyed, for more than two centuries, the greatest tranquillity. In the eleventh century, reigned the celebrated count of Barcelona, Raymond Berengarius, under whom the Provençal poetry was introduced into Barcelona and Catalonia. Around these political stars of the first magnitude was a multitude of smaller counts, viscounts, and barons, dependent on the greater merely in name, but in fact sovereigns. Of the devastating wars of the rest of Europe, the south of France felt but little. At times, the chivalrous festivals of Provence were disturbed by the noise of arms in some private feuds between powerful barons, or were interrupted by the attacks of the Normans or Moors; but the inroads of these plunderers on this coast were neither frequent nor destructive. Sometimes the desire of adventures, or the cry of war in foreign countries, summoned the knights of Provence to the battles of the other European nations. Thus, for instance, in the wars of king Alfonso VI of Castile with the Moors, many knights of the South of France fought under the Spanish Cid, and aided in conquering Toledo, by which means they came into close connexion with Arabian civilization. The crusades, to which the first impulse was given in the south of France, at Clermont, in 1095, by pope Urban VII, and which had so decisive an influence on the whole of Europe, were also felt in Provence. A single war took place upon the happy fields of Provence, which was fatal to the prosperity of that country, and to the poetry of the Troubadours, which never recovered from the effects of it. This was the unfortunate crusade against the Albigenses, in the beginning of the thirteenth century, when the ancient family of the counts of Toulouse was ruined, and the whole land filled with scenes of cruelty and bloodshed. During this whole period, courteousness and gallantry were no where so fully developed as in Provence; and we need not be surprised, when we see the emperor Frederic Barbarossa in Germany, and king Richard Cœur de Lion in England, inviting the Provençal knights to their courts, to receive instruction from them in the usages and ceremonies of chivalry. Provence is the native land of the courts of love (q. v.); and besides the inferior courts of this kind, as numerous as the castles of the viscounts and barons, there were four stationary courts of love at Pierrefeu, at Ramagny, at Aix, and at Avignon. The royal court in Provence, at Arles, was from the times of Boso I, for almost two centuries, the theatre of the finest chivalry, the centre of a romantic life. The assembly of knights and Troubadours, of Jongleurs, with their Moorish story-tellers and buffoons, of ladies acting as judges or parties in matters of courtesy, exhibits a glittering picture of a mirthful, soft and luxurious life. The knight of Provence devoted himself to the service of his lady-love in true poetic earnest, and made the dance and the sport of the tilt-yard the great business of his life. Each baron, a sovereign in his own territory, invited the neighboring knights to his castle to take part in tournaments and to contend in song, at a time when the knights of Germany and Northern France were challenging each other to deadly combat. There might be seen the joyous companies of ladies and knights under fragrant olive groves, upon the enamelled meadows, sporting from one holyday to another: there the gallant knight broke his lance on the shield of his manly antagonist; there the princess sat in the circle of ladies, listening seriously to the songs of the knights contending in rhymes respecting the laws of love, and, at the close of the contest, pronouncing her sentence (*arrêt d'amour*). Thus the life of the Provençals was lyrical in the highest degree; and, if it degenerated, in later times, to voluptuousness and licentiousness, this was owing to the want of a strong moral principle. Their poetry was necessarily lyrical, the expression of their feelings and passions. Even deeds and facts were represented merely through the medium and in the form of feelings. Such a poetry could never be more than a continual improvisatory effusion. It was necessarily superficial: it could be of value only with the accompaniment of music, and was not suited to be preserved in writing. With the Troubadour himself his songs lived and died. Provence cultivated its Romance idiom earlier than any other of the Romance countries. The foundation of this was laid as early as the tenth century, at the court of Arles. In the eleventh and twelfth centuries, it had attained its highest bloom, while the Castilian language, the Northern French and the Italian, were but beginning to be developed. It had spread into Spain and Lombardy, and even German emperors (Frederic Barbarossa) and English kings (Richard Cœur de Lion) composed songs in the Provençal dialect. In the thirteenth century, it had completed its course, and sunk with the country into a state of dependence. This language was peculiarly soft: no other has so many onomatopœias, so much indistinctness in the gender of the words, so complete a system of diminutives and augmentatives: nothing is wanting but energy. With regard to rhyme and to the modern metres, the Provençals claim not only the merit of having first made use of them, but also of having fixed the form which rhyme and metre assumed in the romantic poetry. In their rhymed metre, they have seldom gone beyond the simple iambic, which they exchanged, mostly in those feet of the verse upon which there is no stress, for the trochee, pyrrhichius and spondee; so that if their verses (usually of ten syllables) only had the cæsura and the final syllable sufficiently accented, they cared little about the measure of the other syllables. But they were very fond of complicated rhymes. We find in their stanzas not only the same rhyme repeated through a long series of verses, or the same rhymed word returning at the end of every other verse, but variously intertwined rhymes, in terzinas and other metres, distinctly point out the pattern of Petrarca's canzone and sonnets. As a specimen of the Provençal Romance idiom, and of their metres, we give the following stanza of a sirvente of William de St. Gregory, with its translation, taken from Roscoe's translation of Sismondi:—

Be m play lo douz temps de pascor
Que fai fuelhas e floras venir;
E play mi quant aug la vaudor
Dels auzels que fan retentir
Lor chan per lo boscatge,
E plai me quan vey sus els pratz,
Tendas e pavallos fermatz;
E plai m'en mon coratge
Quan vey per campanhas rengatz
Cavalliers ab cavals armatz

The beautiful spring delights me well,
When flowers and leaves are growing;
And it pleases my heart to hear the swell
Of the birds' sweet chorus flowing
In the echoing wood;
And I love to see, all scattered around,
Pavilions and tents on the martial ground;
And my spirit finds it good
To see, on the level plains beyond,
Gay knights and steeds caparisoned.

What we have left of the poetry of the Troubadours are songs of contention (*tensones*), satires, martial and other serious songs (*sirventes*), and numerous small songs (*chanzos*), war-songs, songs of pastoral life and love (*soulas*, *lais*, *pastourelles*), morning songs and serenades (*aubades* and *serenades*), *retrouanges* and *redondes*, the latter distinguished by artificial burdens. The poetry of the Troubadours, as in the course of times it became more common, was degraded, not unfrequently, to mere ballad singing, and was exposed to much mockery, of which the nobler singers often bitterly complain. It flourished most at the court of Arles, especially under the counts of Provence, in the twelfth century. The biographies of the Troubadours furnish us with a greater variety of matter than their poetry, which, through all its periods, turns continually upon the same subjects. The works of Nostradamus and Crescimbeni are well worthy of being read, and with them the critical extracts of Millot, from the collection of St. Palaye. Some of the most remarkable Troubadours were the following: in the van of the royal and princely singers is William IX, count of Poitou and duke of Aquitaine, equally famous as a poet and a warrior (born 1071). He was followed by the foreign princes and lords, who gladly saw the exotic plant of gallant poetry transplanted to their courts—the emperor Frederic Barbarossa, Roger of Naples, Richard Cœur de Lion, with his famous minstrel Blondel, who composed, also, Provençal verses, and who, according to tradition, discovered the prison of his king by means of his harp; the kings Alfonso and Peter of Arragon, and a vast number of princes and counts in Spain, France and Italy. The most renowned of the rest of more than two hundred Troubadours, whose names and poems have been preserved, are Sordello of Mantua, celebrated for his chivalrous exploits and the praises of Dante; Peyrols, the happy as well as unfortunate servant of the sister of the dauphin of Auvergne, wife of the baron of Merçœur; Bertrand de Born, who is connected with the romantic adventures of Richard Cœur de Lion; Arnald de Maraviglia, who was devoted to the noble lady De Beziers, an eminent Troubadour and valiant knight, whose motto was "*A Dieu mon âme, ma vie au roi, mon cœur aux dames, l'honneur pour moi.*"—See Diez, *Die Poesie der Troubadours nach gedruckten und handschriftlichen Werken dargestellt* (Zwickau, 1827—Poetry of the Troubadours according to printed Works and Manuscripts); Sismondi's *Literature of the South of Europe* (1st vol.). The chief work on this subject is by Raynouard, *Choix des Poésies originales des Troubadours* (Paris, 1818—21), and contains a grammar of the ancient Romance language and its history, besides biographical notices of 350 Troubadours.

Trough, in marine language; the interval between two waves.

Trout. Many of the species of *salmo*, which pass their lives altogether in fresh water, never visiting the ocean, have received this appellation; it is not, however, always thus strictly applied, and, besides, is often improperly given to fish of entirely different habits and conformation. Trout are found only in the clearest streams, and are particularly fond of mountain torrents and alpine lakes. They are remarkable for the beauty of their colors; are very voracious, and have always been the favorite fish of the angler. (For an account of the generic characters, see *Salmon*.) The common trout of our waters (*S. fontinalis* of Mitchill) is found in all the clear streams of the Northern and Middle States, those, at least, which flow into the

Atlantic. It is a beautiful fish: the back is mottled; the sides dark-brown, with yellow spots, which have a scarlet dot in the centre. It sometimes attains the weight of four and a half pounds, but is usually much smaller. It is much in request for the table. The large species of trout which inhabit the larger lakes of Maine, New Hampshire, and those about the sources of the Susquehanna, have not yet been described or properly distinguished, that we are aware of; indeed, it is possible that more than one species has been confounded under the common trout. A gigantic species of trout, from lake Huron, has been described by doctor Mitchill. It is said to attain the weight of a hundred and twenty pounds. The flesh is remarkably fat, rich and savory. The specific name *amethystinus* was applied on account of the purplish tinge and hyaline tips of the teeth. We add some observations on the trout as an object of pursuit to the American angler. It is particularly abundant in New England, where the waters and soil, being of a more alpine character, are highly congenial to the nature of this species of fish. They may be divided into three principal classes, namely, pond trout, river trout and sea trout. Of these, however, there are as many varieties and shades of difference as are known and described in England, Scotland, and other countries; but, for all the purposes of the angler, it is unnecessary to enumerate any others than those above mentioned. Pond or lake trout vary in shape and color. Their size is generally in proportion to the extent of the water in which they are taken. In Moose Head lake, in Maine, they attain the enormous weight of forty or fifty pounds, and, in the lakes of other states, are found of the average size of salmon. This large description of trout are seldom taken, except through the ice in winter, and consequently afford but little sport to the lover of angling. In the Winipisseogee lake, in New Hampshire, and Sebago lake, in Maine, the average size of the fish is about that of the largest mackerel, which it also resembles in shape. The spots upon these and other lake trout are seldom red, but dark and indistinct, according to their size. The last mentioned lake is one of the few in which the fish are taken by the usual method of angling, for which they are more esteemed, as affording good sport, than for their flavor; and the common impression is, that these fish sprung from salmon, but that, having been prevented, by obstructions in the river, from entering the sea, they have become, by confinement, degenerated in size and quality, retaining only the color of the flesh. In the interior lakes of New York, and in the great lakes of the west, the trout grows to a vast size; but these lake trout, being coarse fish, and taken without skill, in the winter only, are held in no estimation by the scientific angler. River or brook trout are common in the New England states; but, much to the annoyance of the angler, they perceptibly diminish in proportion to the increase of mills and manufactories upon the various streams. The size of this class of trout, and the color of the skin and spots, are much alike in all, excepting that some are of a more silvery hue than others; and the color of the flesh varies, perhaps, as it has been observed, according to their different food, being sometimes perfectly white, sometimes of a yellow tinge, but generally pink. There are also trout in various small ponds, both natural and artificial, those taken from the latter being in all respects similar to the brook or river trout. This is to be understood of ponds in the interior, as there are many artificial ponds, situated near the sea coast, at the head of inlets from the sea and tide-water, where the fish are very little inferior in size and quality to those which are taken where the tide ebbs and flows. Of the three classes of trout referred to, there is none so much esteemed as the sea trout, which may be called migratory, in distinction from those which have no access to the salt water. In the early spring months, they are taken in great abundance in the various salt rivers, creeks and tide-waters upon the shores of New England and Long Island, but more particularly in the waters of cape Cod, where the celebrated Waquoit bay, with other neighboring waters, has long been the favorite resort of the scientific fisherman. As the season advances, these fish repair to fresh water, at which time, as well as earlier, they afford great diversion to the angler, by whom they are highly prized, not merely for their superiority of form, color and delicious flavor, but for the voracity with which they seize the bait or the artificial fly, and their activity upon the hook. In the U. States, as well as in Great Britain, this fish is the great object of the angler's art, the perfection of which is the use of the artificial fly. This seductive sport has received new attractions from the amusing work of sir Humphrey Davy, called *Salmonia*.

Trover; an action against a man who is in possession of the goods of another, and refuses to deliver them to the owner, or sells or converts them to his own use, without the consent of the owner. It was originally confined to cases in which one man had actually found the goods of another, and refused to deliver them on demand, but converted them to his own use; hence the names of *trover* and *conversion*.

TROY. (See *Troad.*)

TROY, CITY OF; capital of Rensselaer county, New York, 164 miles north of the city of New York; lat. 42° 44′ N.; population in 1801, 1500; in 1830, 11,584; houses, 1667. There are nine places of public worship, three banks, with a capital of $1,018,000; two insurance companies, and a savings bank; a court-house, of Singsing marble, county jail, of brick, female seminary, Lancasterian school, an infant school, and the Rensselaer school, a very respectable institution, intended particularly to teach the practical application of knowledge; taxable property in 1831, $3,857,793. Large quantities of lumber, flour, grain, beef, pork, wool, &c., besides manufactured goods, are shipped to the river towns, and New York, New Jersey and Boston, in eighty vessels, averaging more than 75 tons: ten transport boats, averaging 250 tons, and towed by steamers, also ply between Troy and New York. It is common to see boats from lake Erie enter the Hudson at Troy, and spread sails on spars which they have brought on deck. There are now (1831) two daily lines of western boats, sixty-eight in number; also two daily lines of northern boats, forty-three in number. The united Champlain and Hudson canals enter the Hudson at Troy; tolls received in 1831 at the collector's office, $169,456. Two large steam-boats run daily between Troy and New York, and two or three steam-boats between Troy and Albany. The manufactories include eight grain mills, grinding 500,000 to 600,000 bushels annually, three mills for grinding gypsum, two large rolling and slitting mills, using (1832) 3000 tons of foreign iron, connected with two nail factories and one spike factory, which will make, in 1832, it is supposed, about 1300 tons of nails, and 700 tons of spikes for ships, rail-ways, &c.; two air furnaces, melting about 600 tons of iron, two steam-engine factories, an extensive bell-foundery, where 27,000 bells were cast in one year; two shops for carriage building, which have sold, within a year, about 120 post coaches, besides a large number of other carriages; also four potteries, which make wares to the amount of $28,000 annually; two cotton factories, a woollen factory, a rope-walk, two buhr mill-stone factories, a paper-mill, a paper-hanging factory, four tanneries, a morocco factory, &c. &c. About 25,000 bbls. of beer, 95,000 rolls of paper, 700,000 lbs. of tallow and soap, 100,000 pair of boots and shoes, and hats to a large amount, 500,000 bricks, $30,000 worth of brushes, and more than 100,000 casks, are annually made, and not less than 200 tons of staves annually sold.

TRUCE OF GOD, in the Latin of the middle ages, *Treuga Dei* (*Treuge*, or *Trewa*, from the German word *Treu*, faithful), was, in the period just mentioned, a limitation of the right of private warfare introduced by the church, in order to mitigate an evil which it was unable to eradicate. This truce of God provided that hostilities should cease, at least on the holydays, from Thursday evening to Sunday evening in each week; also during the whole season of Advent and Lent, and on the "octaves of the great festivals." (See *Festival.*) This salutary regulation was first introduced in 1077, in Aquitaine, where a bishop professed to have received the command of God for its institution; then in France and Burgundy. In 1038, the diet at Soleure deliberated respecting the establishment of it in Germany. Under William the Conqueror, it was introduced into England, and, in 1071, into the Netherlands. In French, it was called *Treve de Dieu*. The clergy were very anxious that it should be generally acknowledged. At many councils, it was a chief subject of discussion; for instance, at the councils of Narbonne (1054), Troyes (1093), Clermont (1095), Rouen (1096), Nordhausen (1105), Rheims (1136), St. John of the Lateran (1139 and 1179), and Montpellier (1195), it was enjoined by special decrees. At a later period, the truce of God was sometimes extended to Thursday. Whoever engaged in private warfare on these days was excommunicated. This was all which the clergy could effect in that barbarous age. The truce of God was also extended to certain places, as churches, convents, hospitals, church-yards, &c., and certain persons, as clergymen, peasants in the fields, and, in general, all defenceless persons. At the council at Clermont (1095), it was made to include particularly all crusaders. Thus the clergy effected what would have been impossible for any secular authority, because they wisely demanded no more than they could expect to obtain, and because religion was much the strongest power which could be brought to act on the turbulent warriors of thoes times. It may be easily imagined, however, that the limits prescribed were not very nicely observed; and we find constant complaints of their violation in the records of the councils and the chronicles of convents.

Truffaldino. (See *Masks.*)

Truffle (*tuber*); a genus of mushrooms (*fungi*), remarkable for their form, and for growing entirely under ground, at the distance of a few inches from the surface. Unlike the *lycoperdon*, or puff-ball, they are not resolved into a powder at maturity, but their substance becomes gelatinous. Only few species are known, which are found chiefly in temperate climates. Some of them have the rind rough, with small tubercles; others have it entirely smooth. They attain the diameter of two or three inches.—The common truffle (*T. cibarium*), so celebrated in the annals of cookery, is said to inhabit all the warm and temperate parts of the northern hemisphere; but we are in need of further evidence to establish the fact of its existence on this continent. In certain districts, it is astonishingly abundant, as in Piedmont, and at Perigord, in France, which latter place has, in consequence, acquired celebrity for producing it. They abound most in light and dry soils, especially in oak and chestnut forests; but it would be difficult to procure them any where, were it not that hogs are extremely fond of them, and lead to their discovery by rooting in the ground. Dogs are sometimes taught to find this fungus by the scent, and to scratch it up out of the ground. The season for collecting continues from October to January. The truffle is usually about as large as an egg; is entirely destitute of roots; the skin blackish or gray, studded with small pyramidal warts; the flesh white, gray or blackish, varied with black or brown veins. They are prepared for the table in various manners, but should be eaten with moderation, as they are difficult of digestion. They may be kept in ice, or covered with lard: in some countries, they are dried. They were in use among the ancient Greeks and Romans. Several varieties are distinguished, and, besides, some of the other species are much esteemed for culinary purposes.

Trullan Council. (See *Constantinople, Councils of.*)

Trumbull, John, an eminent American poet and patriot, was born April 24, 1750, in the place now called Watertown, Connecticut. His constitution was delicate; and his education was conducted by his father, a clergyman of good classical attainments, and his mother, a lady of superior refinement, until 1763, when he entered Yale college. In 1771, he was appointed a tutor in that institution. In 1773, he was admitted to the bar of Connecticut, but removed to Boston, and continued his studies in the office of John Adams. At that time, the members of the bar in that city were distinguished for the zeal with which they vindicated the rights of the colonies. With Otis and his compeers, Trumbull, though much younger, warmly sympathized and coöperated. In 1775, he published the first part of McFingal, a political satire, which he had composed at the request of the members of the American congress. This poem passed through thirty editions, and was very serviceable to the American cause. For many years, Mr. Trumbull was a member of the state legislature of Connecticut, and, in 1801, was appointed a judge of the superior court. He received the additional appointment of judge of the supreme court of errors, which he held until the new organization of the judiciary under the constitution of 1818. In 1825, he removed to the city of Detroit, the capital of Michigan territory, where he resided until his death, which occurred May 12, 1831, from gradual decay.

Trumpet; the loudest of all portable wind instruments, and consisting of a folded tube, generally made of brass, and sometimes of silver. The ancients had various instruments of the trumpet kind, as the tuba, cornu, &c. Moses, as the Scripture informs us, made two of silver, to be used by the priests; and Solomon, Josephus tells us, made two hundred like those of Moses, and for the same purpose. The modern trumpet has a mouth-piece nearly an inch across. The pieces which conduct the wind are called the *branches;* the parts in which it is bent, the *potences;* the canal between the second bend and the extremity, the *pavilion;* the rings where the branches take asunder, or are soldered together, the *knots*, which are five in number, and serve to cover the joints. This powerful and noble instrument, like the horn, only has certain notes within its compass. The trumpet produces, naturally and easily, G above the bass-cliff note, or fiddle G, C on the first leger line below in the treble, E on the first line of the stave, G on the second line, C on the third space, and all the succeeding notes up to C in alt, including the sharp of F, the fourth of the key. Solo performers can also produce B flat (the third above the treble-cliff note); and, by the aid of a newly-invented slide, many other notes, which the common trumpet cannot sound, are now produced. The trumpet, from its exciting effect, is well fitted for military music; and a band of twenty or thirty trumpets has a peculiarly spirit-stirring sound. It is used for giving signals, and also accompanies flags of truce, heralds, &c. With the ancients, the σαλπιγξ seems to have come nearest to our trumpet. Weidinger, in Vienna, has invented a trumpet with keys; but the instrument, in this way, loses in beauty of tone what it gains in compass.

Trumpet, Hearing. (See *Ear Trumpet.*)

Trumpet, Speaking, is a tube of considerable length, viz. from six feet to twelve, and even more, used for speaking with, to make the voice heard to a greater distance. In a trumpet of this kind, the sound in one direction is supposed to be increased by the reflection from the sides.

Trumpeter (*psophia*); a South American bird, about as large as a domestic fowl, referred by naturalists to the waders, of which it has the long neck and legs; but it possesses many characters in common with gallinaceous birds. The feathers of the throat and upper part of the breast have the most brilliant reflections of green, gold, blue and violet: the other parts of the body are black, except the middle of the back and lesser coverts, which are reddish, and the greater coverts of the wings and tail, which are ash-colored. In the wild state, this bird is found only in the mountainous and woody districts of the hottest parts of South America, where it lives on fruits. It runs swiftly, sometimes walks with a slow pace, or leaps. Its wings and tail are very short, and its flight clumsy. The name has been applied on account of the note which it utters. It is easily tamed, and shows as much attachment and fidelity to its master as a dog. It obeys his voice, caresses and follows him, and recognises him after a long absence. It drives away all strange animals, and fears neither cat nor dog. Those which live in the streets of Cayenne will often attach themselves to a stranger, and follow him wherever he goes. In short, these birds are superior to all others in intelligence and social disposition; and it would be desirable to naturalize them in our climate—an experiment which has never been fairly tried, that we are aware of. It is said that flocks of sheep are confided to their charge, and that they constantly bring them home every evening: it is certain that the care of poultry may be safely intrusted to them.

Trumpet-Flower (*bignonia*). The *B. radicans* is a well-known ornamental vine, a native of the Southern and Middle States, and frequently cultivated in gardens. The flowers are very large, scarlet, and the corolla tubular, three times as long as the calyx. The leaves are pinnate; the leaflets ovate and dentate. The stem climbs by means of radicles, which it throws out at intervals. Among the vegetable productions of our climate, we hardly know an object more imposing than this plant when in full flower. *B. capreolata* is more strictly a southern species, but succeeds very well in the Middle States: the leaves are widely different: the flowers are similar, though much smaller.

Truss, in surgery; a bandage or apparatus employed in ruptures (see *Hernia*), to keep up the reduced parts, and hinder a fresh protrusion. It is essential to the health of a large portion of the human race. A truss ought so to compress the neck of the hernial sac, and the ring, or external opening of the hernia, that a protrusion of any of the contents of the abdomen may be completely prevented. It should make an equal pressure on the parts without causing inconvenience to the patient, and be so secured as not easily to slip out of its right position. Every truss consists of a pad, for compressing the aperture through which the hernia protrudes, and of another piece which surrounds the abdomen: to these are sometimes added a thigh-strap and a scapulary, which passes over the shoulder. The various kinds are far too numerous to be described here.

Truxton, Thomas, a captain in the navy of the U. States, was born on Long Island, in the state of New York, Feb. 17, 1755. At the age of twelve years, he went to sea. He was impressed, during his apprenticeship, on board the Prudent, an English sixty-four, but was subsequently released. In the early part of 1775, while in command of a ship, he was successful in bringing considerable quantities of powder into the united colonies, but was subsequently, in the same year, captured and carried into St. Christopher's. Having made his escape, and arrived in Philadelphia, he entered, as lieutenant, on board the Congress, one of the two first private armed ships, fitted out in the colonies. This ship sailed in company with the Chance, in the winter of 1776, and captured several valuable ships off the Havana, one of which he took the command of, and arrived in her at Bedford, Massachusetts. In June, 1777, in a vessel called the Independence, and fitted out by himself and Isaac Sears, esquire, he sailed for the Azores, and made many prizes. He now changed his ship, and sailed in the Mars, of upwards of twenty guns. In this cruise off the British channel, he sent his prizes into Quiberon bay, which induced lord Stormont to make a remonstrance to the French court. During the whole war, he was constantly engaged either in fitting out or commanding ships of war from Philadelphia. While carrying to France Thomas Barclay, esquire, our consul-general to that country, in the ship St. James, of twenty guns, he had a very close engagement with a British private ship of thirty-two guns, which he obliged to sheer off. In all his engagements with the British, he was victorious. From the peace of 1783 until 1794, he was very actively engaged in commercial pursuits. President Washington, during the war with France, appointed him one of the six captains of the American navy; and, after building the frigate Constellation, he sailed, at the head of a squadron, for the West Indies, in the early part of 1799. Feb. 9 of that year, he captured, after an engagement of one hour and a quarter, the French frigate L'Insurgente, of fifty-four guns. This was the first opportunity offered to an American frigate of engaging an enemy of superior force. In a short time, the Constellation was again at sea, and soon encountered, Feb. 1, 1800, the French frigate La Vengeance, of fifty-four guns. An action ensued, which lasted from eight in the morning until one, when the enemy was completely silenced. A squall now ensued, which enabled the French ship to effect her escape, and to arrive in Curaçoa, in a most shattered condition, having lost 160 men, killed and wounded. Congress voted a gold medal to the commodore, for the gallantry displayed in this action. This was the last cruise of captain Truxton. Having, during the administration of Mr. Jefferson, been appointed to the command of the expedition against Tripoli, he was denied the assistance of a captain to command his flag ship (a custom which had always prevailed), and therefore declined the command of the expedition, which was construed, by the president, into a resignation of his rank in the service; and he was therefore dismissed. Commodore Truxton retired to the country, where he continued to reside until the citizens of Philadelphia, in 1816, elected him their high sheriff. He remained in that office till 1819, and died May 5, 1822, in his sixty-seventh year.

Trying; the situation in which a ship lies nearly in the trough or hollow of the sea in a tempest; or it is the act of lying to in a storm, which may be performed under any of the courses reeved, if requisite, or even under bare poles, the helm being lashed a-lee. (See *Ship.*)

Tschaik (Turkish for *ship*) is used in Hungary to signify a sort of light galley, used on the Danube, and provided with sail and rudder. The *tschaik* carries from two to twelve cannon, and from ten to one hundred men. The men who serve on board are called *tschaikists*, or *pontoneers*. They occupy a part of the military frontier of Hungary, lying between the Theiss and Danube, and hold their land by rendering service in manning flotillas on the Danube, and acting as pontoneers on the rivers in Hungary. Their arms are muskets, musketoons, sabres and lances. (See *Military Frontiers.*)

Tschirnhausen, Ehrenfried Walter von; an ingenious mathematician, born in Lusatia, April 10, 1651. He studied some time at the university of Leyden, and, in 1672, entered the Dutch army, in which he served some time as a volunteer, and then travelled into most of the principal countries of Europe. On his return, being desirous to perfect the science of optics, he established three glass-houses in Saxony, and showed how porcelain might be made from a particular kind of earth, and may therefore be considered as the founder of the celebrated Dresden porcelain manufactory. He likewise directed his attention to mathematics, and discovered a particular kind of curves, endowed with very remarkable properties, an account of which he communicated to the academy of sciences of Paris, in 1682, which body elected him a member. About the year 1687, he constructed an extraordinary burning mirror (see *Burning Mirror*), and, soon after, a glass lens, three feet in diameter, and convex on both sides, which had a focus of twelve feet, and weighed 160 pounds. Its effects were astonishing. (See *Burning Glass.*) The only work which he published separately was his *De Medicinâ Mentis et Corporis* (printed at Amsterdam, in 1687); but he was the author of several papers on burning glasses, and on his discoveries in regard to curves, which appeared in the Leipsic Transactions, and the Memoirs of the French Academy of Sciences.

Tsulakees, or **Tsalakees** (sometimes also written *Tsalagis*); the proper name of the Indian tribe whom we commonly term *Cherokees*. Their territory originally comprised more than half of what is now the state of Tennessee, the southern part of Kentucky, the south-west corner of Virginia, a considerable portion of the two Carolinas, a large part of Georgia, and the northern part of Alabama. This tract probably contained more than 35,000,000 acres. Between the close of the revolutionary war and the year 1820, the Cherokees sold to the U. States, at different times, more than three quarters of their possessions, and now retain less than 8,000,000 acres, of which Georgia claims 5,000,000 acres as falling within that state, and Alabama nearly 1,000,000 of the residue. The remainder, if a division takes place, will go to Tennessee and North Carolina. Their population is increasing. In eighteen years, ending in 1825, their numbers, including those who emigrated to the Arkansas, had increased more than 7000, or sixty per cent., which varies little from the common rate of increase among the white inhabitants of the Southern States. The number of native Cherokees of pure and mixed blood, east of the Mississippi, was at that time 13,563, and 147 white men and 73 white women had intermarried with them, and resided among them. The number of African slaves was 1277. The population is now (1832) 15,060, of whom over 1200 are African slaves. Agriculture and many of the arts of civilized life have been introduced among them, and their progress in civilization has been very considerable. In 1825, they possessed 79,842 domestic animals (horses, cattle, swine and sheep), 762 looms, 2486 spinning-wheels, 172 wagons, 2943 ploughs, ten saw-mills, thirty-one grist-mills, sixty-two blacksmiths' shops, eight cotton gins, eighteen schools, nine turnpike roads, eighteen ferries, and twenty public roads, being a great increase above the returns of 1809. A well-organized system of government has been established. The executive consists of a principal chief and assistant, with three executive counsellors, all elected by the legislative body. The legislature consists of two bodies, a national committee and a national council, the former containing sixteen members, the latter twenty-four. The members are chosen for the term of two years, by the qualified electors in their several districts. These electors include all free male citizens who have attained the age of eighteen years, except persons of African origin. The rules respecting the nature and powers of the legislature in general, are similar to those of the several states in the Union. Each of the two bodies has a negative on the other, and together they are styled the *general council of the Cherokee nation*. The chief and his assistant hold their offices for four years. The executive counsellors are chosen annually. The judiciary consists of a supreme court, and of circuit and inferior courts. The members of the supreme court hold their offices for four years. There is also a public treasury, a printing-office, and a newspaper, the Cherokee Phœnix, commenced in February, 1828, and edited by a Cherokee. This newspaper is printed partly in the Cherokee character, invented by Guess.* The press is owned and directed by the Cherokee government. They have founts of types in the Cherokee character. The Gospel of Matthew and a collection of hymns, translated by Mr. Worcester, one of the missionaries, have been printed in this character. Intermarriages have in many instances taken place between the Cherokees and the whites in the neighborhood, and many of the half breeds have large plantations, and carry on agriculture with more spirit than the full-blooded Cherokees. There are very different degrees of improvement among the members of the tribe. Some families have risen to a level with the white population of the U. States, while the improvement of others has just commenced. In general, those of mixed blood are in advance of the full-blooded Indians. Not less than a quarter of the people are probably in a greater or less degree of mixed blood. The dress of most of the Cherokees is substantially the same as that of the whites around them. A great part of their clothing is manufactured by themselves, though not a little is of the fabrics of New England and foreign countries —calico, broadcloths, silk. The greater part are clothed principally in cotton, and many families raise their own cotton, out of which the women make substantial cloth. Cultivation by the plough is almost universal. Most families raise enough to supply their own wants, and many have considerable quantities of corn for sale. Suffering for want of food is said to be as rare among the Cherokees as in any part of the civilized world. None of them depend, in any considerable degree, on game for a support. The Cherokees live chiefly in villages, and their dwellings are mostly comfortable log cabins, with chimneys, and generally floored. Many of the houses in the nation are decent buildings of two stories, and some are even handsome dwellings of painted wood or brick. Polygamy is becoming rare, and women are no longer treated as servants, but are allowed their proper place. Superstition is rapidly declining, and the ancient traditions are fading from memory, so that it is difficult to collect them. Conjuring, however, is still practised to a considerable extent. In regard to intemperance, the Cherokees would not suffer by a comparison with the white population around them. The laws rigorously exclude intoxicating liquors from all public assemblies, and otherwise restrict their use. They have among them temperance societies on the principle of entire abstinence. The civil officers enforce the laws against the introduction of ardent spirits, and fine transgressors. In regard to education, the missionaries, in a report dated Dec. 29, 1830 (see *Missionary Herald* for March, 1831), state that they have the names of 200 Cherokee men and youths whom they believe to have attained an English education sufficient for the transaction of ordinary business. This number does not include females, and many men and youths who can barely read and write. An increasing anxiety among the people for the education of their children is very apparent. The missionary schools contain about 500 children, learning English. A majority of the persons between childhood and middle age can read their own language, in Guess's alphabet, with greater or less facility. In regard to religion, the mass of the people have externally embraced Christianity; and there is regular preaching at several places, both by missionaries and natives. How far the schools and the preaching have been interrupted by the agitations at present prevailing, we cannot say. During the two last years (1831 and 1832), the Cherokees have been greatly agitated by political troubles. Their government has been hindered in its operations, their laws counteracted by the extension of the jurisdiction of Georgia over their territory; many of their citizens have been imprisoned, and the nation has been threatened with banishment. The missionaries of the board of foreign missions have been prohibited to reside among them by the laws of Georgia. Four of them were arrested in the summer of 1831, for not removing; and two of them, Mr. Worcester and Mr. Butler, have been, for the same cause, tried and sentenced by the court of Georgia for four years to the Georgia penitentiary, where they are now confined. The Georgians have made a law, authorizing the governor to have the Cherokee lands surveyed and divided by lottery. The government of the U. States are endeavoring to effect the removal of the Cherokees from their lands by treaty—the only mode in which they can legitimately deal with them, as they have already recognised their independence by several treaties; and their rights under these treaties have been lately confirmed by a decision of the supreme court of the U. States, in January, 1831. The terms offered them are an extensive and fertile territory west of the Arkansas, to be secured to them by patent, and to be for ever beyond the boundaries of any state or territory, where they are to be allowed to exercise all the powers of self-government compatible with a general supervision of congress over them, to appoint an agent to reside at Washington, to send a delegate to congress, and to be recognised, when congress shall deem proper, as a *territory*. The general council of the Cherokees, however, have declined accepting the proposal.—The Cherokees of the Arkansas are those who, since the year 1804, removed, at different times, from the east of the Mississippi to a tract on the north bank of the Arkansas river, between lon. 94° and 95° W.; population, about 5000. The greater part of this emigration took place between 1816 and 1820. There is a missionary station among them. By a treaty concluded in May, 1828, they agreed to remove still farther west. This portion of the Cherokees has also made considerable progress in agriculture and the arts of civilized life.—For further information, see the different numbers of the *Missionary Herald* and the *Cherokee Phœnix*; the *Decision of the Supreme Court of the United States in the Cherokee Case* (published at Philadelphia, 1831); also *Essays on the Present Crisis in the Condition of the American Indians* (Boston, 1829). For information respecting the language of the Cherokees, see *Indian Languages* (appendix, end of vol. vi.).

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* The inventor and the invention are thus described in the Cherokee Phœnix:—Mr. Guess is, in appearance and habits, a full Cherokee, though his grandfather on his father's side was a white man. He has no knowledge of any language but the Cherokee. He was led to think on the subject of writing the Cherokee language by the conversation of some young men, who said that the whites could put a talk on paper, and send it to any distance, and it would be understood. In attempting to invent a Cherokee character, he at first could think of no way but that of giving each word a particular sign. He pursued this plan for about a year, and made several thousand characters. He then became convinced that this was not the right mode, and, after trying several other methods, at length conceived the idea of dividing the words into parts. He now soon found that the same characters would apply in different words, so that their number would be comparatively small. After putting down and learning all the syllables that he could think of, he would listen to speeches and the conversation of strangers, and whenever a word occurred which had a part or syllable in it which was not on his list, he would bear it in mind till he had made a character for it. In this way he soon discovered all the syllables in the language. In forming his characters, he made some use of the English letters, as he found them in a spelling-book in his possession. After commencing upon the last mentioned plan, he is said to have completed his system in about a month, having reduced all the sounds in the language to eighty-five characters.—Mr. Guess was considerably advanced in life when he made this invention.

Tuaricks, called by Hornemann the most interesting nation of Africa, are most extensively spread over Northern Africa, and, indeed, divide with the Tibboos the whole of the Sahara; the latter occupying the wells and the wadys of the eastern, and the Tuaricks those of the western portion of this sterile belt. The Tibboos are black, yet without what we generally call negro features; the Tuaricks, on the other hand, are white people of the Berber race, and are Mohammedans of the sect of Maleki, but are believed to be quite as indifferent to religion as the Kabyles. They are a very warlike nation, and often make incursions into the territory of the timid Tibboos to carry off all whom they can catch for the slave market. The late travellers Lyon, Denham, Clapperton and Laing found them hospitable, frank and honest. They inhabit that extensive portion of the Sahara circumscribed on the east by Fezzan and Tibboo, south by the negro nations of Bournou, Haourra, Gouber and Timbuctoo, and on the west by the oases of Tedeekels and Twat. The country of the Mozabis, Engousah and Ghadames, forms their northern limits, beyond which they never proceed. Being nomadic, they are found in the vicinity of all the negro population from Tibboo to Timbuctoo, where they rove for the purpose of kidnapping. They carry on war and commerce with equal activity. According to Mr. Hodgson's interesting letters in the Transactions of the American Philosophical Society, (vol. iv, new series), *Tuarick* comes from the Berber language, in which it signifies *tribes*. Now *kabail* is the Arabian for tribes, borders or families; and thus the Kabyles of the Atlas have an appellation corresponding to the Kabyles of the desert; and they are the same people, as Mr Hodgson shows by a comparison of their vocabularies. They are one people, and the great Lybian race still exists in Africa: its language has not been effaced.—For more information respecting the Tuaricks, and particularly their language, the Berber, see the above letters, already alluded to in the article *Berber*, but not published when that article was written.

Tuba; a wind instrument of the Romans, resembling our sacbut or trumpet, though of a somewhat different form. It was used in war.

Tubercles. (See *Pulmonary Consumption.*)

Tuberose (*polianthes tuberosa*). This highly odoriferous and favorite flower was introduced into Europe from the East Indies, about the middle of the sixteenth century. Though almost purely an ornamental plant, its culture is now so extended that the roots form a considerable article of export from the southern to the northern parts of Europe. The root is a rounded bulb; the radical and inferior leaves long, sessile, entire, almost sword-shaped, and very acute; the stem upright, cylindrical, unbranching, three or four feet high. The flowers are disposed in a simple and more or less elongated spike: they are large, sessile, alternate, tubular, and of a very pure white: the tube of the corolla is a little curved, and divides into six oval obtuse lobes. The flowers expand successively, so that they continue nearly three months. Several remarkable varieties are known. It succeeds best in a warm exposure. The essential oil is used by perfumers.

Tübingen; an old town of Würtemberg, circle of the Neckar, situated in a valley on the Neckar, sixteen miles southwest of Stuttgard; lon. 9° 4′ E.; lat. 48° 31′ N.; population, 7600. It contains an hospital, four churches, a theological seminary, a college for the nobility, and a university. The environs are finely diversified by hill, dale and forest. The town has some woollen manufactures, but is supported chiefly by the university, which was founded in 1477, and received very important improvements in 1769. It has a good library, a botanic garden, and, in 1829, had 874 students. It was formerly exclusively Protestant; but a few years since the Catholic university at Elwangen was united with it. In 1828, the Würtemberg chamber of deputies granted it a yearly sum of 80,000 guilders. It has thirty-one professors.

Tuccoa Creek, Cataract in. (See *Cataract.*)

Tucker, Abraham, an English writer on morals and metaphysics, was the son of a merchant of London, where he was born in 1705. After completing his studies at Oxford, he travelled in France. He married in 1736, and, having lost his wife in 1754, he published, under the title of a Picture of Love without Art, her letters to him. Some time after he produced his Advice from a Country Gentleman to his Son, and commenced his great work, the Light of Nature pursued (7 vols., 8vo.), the first three of which appeared in 1768, under the pseudonym of Edward Search: the remaining volumes were printed after the death of the author, which took place in 1774. (See Mackintosh's *Essay on Ethical Philosophy.*)

Tudor. (See *Great Britain*, and the articles *Henry VII, VIII, Elizabeth*, &c.)

Tuesday (Latin *dies Martis*); the third day of our week, probably so called from the Anglo-Saxon god of war Tuu, (gen. *Tuues*, whence the Anglo-Saxon *Tuuesdæg.*) (See *Week*, and, for Shrove-Tuesday, see *Shrovetide.*)

Tuet. (See *Tuiscon.*)

Tugendbund (German, *union of virtue*); the name generally given to an association in Prussia, called also the *moral-scientific union*, founded by some patriots, soon after the fatal peace of Tilsit. Its object was to promote the moral regeneration of the people, and to prepare it for better times. Schools and universities, physical and moral science, the army, the government, the distress of the people, all occupied the attention of the society, which suggested many ideas subsequently adopted. The government formally recognised its existence, and at times received reports from the society. There were no degrees, secrets, signs, or forms of initiation. Any Prussian subject of good character might become a member, on promising in writing to promote the objects of the society, and to be faithful to the reigning family. The minister Stein (q. v.) favored the society; but when he left the ministry, and Schill (q. v.), one of the members, had attacked the French, though not at the instigation of the society, the French induced the king to abolish it. Professor Krug of Leipsic, who was himself a member, wrote *Das Wesen und Wirken des sogenannten Tugendbundes und anderer angeblichen Bünde* (Leipsic, 1816).

Tuileries (from *tuile*, a tile, because the spot on which it is built was formerly used for the manufacture of tiles); the residence of the French monarchs, on the right bank of the Seine, in Paris. Catharine de' Medici, wife of Henry II, began the building from the designs of Philibert de l'Orme and Jean Bullant (1564). Henry IV extended it, and founded the gallery (1600), which was intended to connect it with the Louvre, and form a residence for twenty-four artists. Louis XIV enlarged it (1654), and completed the great gallery. The side towards the Louvre consists of five pavilions and four ranges of buildings; the other side has only three pavilions. In the pavilion of Flora Napoleon resided, and it was afterwards occupied by Louis XVIII. The exterior of the Tuileries is deficient in harmony, having been built at different times, and on very different plans; but the interior is magnificent. The gallery above mentioned, which connects the Tuileries with the Louvre, is completed on the side towards the Seine; the lower part consists of open arcades; above is the collection of pictures. The second gallery leading to the *place Rivoli* and the *rue St. Honoré,* was begun by Napoleon in 1808, but is not finished. To make room for it, many houses and whole streets were levelled; and much of the ground is still occupied by the ruins of the former buildings. On the west of the palace lie the gardens of the Tuileries, forming a quadrangle of the width of the palace, and 1800 feet in length; they are sixty-seven arpents* in superficial area. Upon two sides they are enclosed by long terraces (that on the side to the Seine commands a beautiful prospect) and iron railings. This garden, laid out by the celebrated Lenôtre for Louis XIV, has, in more recent times, been highly ornamented in the French style, and contains alleys of orange trees and other trees, groves, lawns with beds of flowers and shrubberies, fountains and basins of water with swans and gold fish, a great number of vases, and more than sixty statues imitated from ancient works. It is filled at all hours of the day with persons of all classes: chairs and the newspapers may be had at a small price. Towards the city, and separated from the court by an iron palisade, is the *place du Carrousel* which receives its name from a *carrousel* exhibited here by Louis XIV, in 1664. The *arc du Carrousel*, erected by Napoleon in 1806, forms the principal entrance into the court: it was formerly ornamented with the horses of St. Mark and a statue of Napoleon, which have been removed. The French court was formerly called the "court of the Tuileries;" but under the three last Louises, who resided at Versailles, that appellation was changed to the "cabinet of Versailles." Napoleon resided some time at St. Cloud, and the court then received that name. But since the restoration, the kings have again occupied the Tuileries.

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* The Paris arpent is rather more than four fifths of an English acre.

Tuiscon. According to Tacitus, the Germans, in their songs, gave this name to the founder of their nation. *Thuisco* or *Tuisco* is probably the adjective of *Theut* or *Teut;* hence *theutisch*, *teutsch*. (The Germans call themselves *Teutsche* or *Deutsche*, and their country *Teutschland* or *Deutschland*.) *Theut* signifies something original, independent, e. g. earth, nation, father and lord. From *Theut* comes *Teutones*, the people of Theut; hence also *lingua Theutisca*, *Theodisc*, *Teutonic*, *Theutish*, *Teutsch* (called, in a great part of Westphalia, *Düsk*). In this we recognise the *Thuisco* of Tacitus (*Germ*, 2). The word *Deutsch* first appears in a document of the year 813; and the first king who was called *König der Deutschen*, *rex Teutonicorum*, was Otho the Great. (See *German Language*.) In the northern mythology, *Thuiscon*, *Tuiscon*, *Taut*, *Tot*, *Theot*, *Tuu*, &c., is a god, from whom the Gauls and Germans believed themselves descended. *Thuiscon*, with the Earth (*Artha* or *Hertha*), gave birth to men; hence called *Teutones*. But only the inhabitants of the Scandinavian islands, between the extreme coasts of Southern Scandinavia and the Cimbric Chersonesus, were properly called *Teutones*. The ancient Germans revered Tuiscon as a man with a gray beard, clad in the skin of an animal, holding a sceptre in his right hand, and stretching out the left with extended fingers. According to Julius Cæsar, they offered to him human sacrifices. The name of *Tuesday* has been derived from this god.

Tula; a town of Russia, capital of a government of the same name on the Upha; 112 miles south of Moscow; lon. 37° 2′ E.; lat. 54° 12′ N.; population, 38,000. It contains several seminaries, but is chiefly distinguished for its manufactures of hardware, on which account it is styled the Sheffield of Russia. It has a cannon foundery, and a manufactory of arms for government, as muskets, bayonets, swords, &c.; besides two iron founderies, and 600 shops of smiths and others for making fire-arms and cutlery for private use. The ore is supplied in abundance from the vicinity; but the manufacture is inferior to that of England.

Tulip (*tulipa*); a genus of plants belonging to the *liliaceæ*, containing about a dozen species, mostly natives of Europe, or of the neighboring parts of Asia. Their roots are bulbous; the leaves few in number, and disposed about the base of the stem; the latter simple, and usually terminated by a large solitary flower. The calyx is wanting; the corolla composed of six petals, and the stamens six in number. The most noted species is the common garden tulip (*T. gesneriana*), which has received its name from the celebrated Conrad Gesner, to whom we owe its introduction into the European gardens. It was brought, originally, from the Levant; and Gesner first discovered it in 1559, at Augsburg, in the garden of an amateur, who had received it from Constantinople or Cappadocia. The stem is about a foot or eighteen inches high, provided at the base with three or four lanceolate, glaucous leaves. In the wild plant, the color of the flowers is uniform, often yellow or reddish, sometimes brownish; but cultivation has modified them in a thousand ways, and produced an immense number of varieties. The tulip has always been a favorite plant with the Belgians and Dutch; and, about a century after its introduction, the mania prevailed to such an extent in these countries that more than two thousand dollars were often given for a single root—in those days an immense sum. It is still extensively cultivated in Holland, from which all Europe is supplied with bulbs; and it is said that nothing can equal the magnificence of the gardens in that country, at the time when they are covered with innumerable varieties of these flowers. These varieties are often disposed in a regular figure, according to their size and the different colors. In raising tulips from the seed, florists pursue a mode in some respects the reverse of that practised with other plants. Instead of saving the seed from the finest variegated tulips, they prefer unbroken flowers for breeders, selecting such as have tall, strong stems, with large, well-formed cups, clear in the bottom. Plants raised from the seed of the finer variegated sorts form poor, weak breeders, of no value. The seed is sown on fine, light soil, thinly covered, and protected and shaded by a frame. At the end of the second year, the bulbs are taken up, and replanted three inches apart; and again at the end of the fourth year. Some will bloom the fourth year, most the fifth, and all the seventh year.

Tulip-Tree (*lyriodendron tulipifera*); one of the most remarkable productions of the North American forest. Among our deciduous trees, it is second in size only to the button-wood; and the fine form of the trunk, the beauty and singularity of the foliage and flowers, entitle it to rank among the most magnificent vegetables of temperate climates. It is, besides, one of our most valuable trees, from the numerous and useful applications of its wood. The tulip-tree is readily recognised by the peculiar truncated leaves. It belongs to the same natural family with the magnolias. The flowers are large and showy, variegated with different colors, among which yellow predominates, and somewhat resemble those of the tulip. The fruit is a cone two or three inches in length, composed of a number of long, thin, narrow scales, attached to a common axis. The leaves are alternate, supported on long foot-stalks, smooth, and of a pleasing green color. They are divided into three lobes, the middle one of which is truncated, and slightly notched at the summit. In most parts of the U. States, this tree is known only by the improper denomination of *poplar:* sometimes it is called *white-wood*, or *canoe-wood;* but the more appropriate name which we have adopted is used chiefly in European gardens. It is unknown, in the wild state, east of the Connecticut river, although occurring as far north as latitude 45°, at the southern extremity of lake Champlain. It is most common, and attains the largest size, in the Middle and especially in the Western States. Its comparative rareness in the lower parts of the Southern States is owing to the nature of the soil, which is either too arid or too watery. Every where it is less abundant than the oaks, walnuts, ashes and beeches, for it delights only in deep, loamy, and extremely fertile soils, such as are found in the rich alluvial flats which lie along the rivers, and on the borders of the great swamps that are enclosed in the forests. In some parts of the Western States, it constitutes, alone, pretty extensive tracts of the forest, and here attains its largest dimensions: stocks have been measured more than twenty feet in circumference, and whose height was estimated at from 120 to 140 feet; and sometimes the trunk is perfectly straight, and uniform in diameter, for more than forty feet. The heart, or perfect wood, is yellow, approaching to a lemon color, and the sap white. Though classed among the light woods, it is much heavier than the poplars: the grain is equally fine, and more compact: it is easily wrought, polishes well, and is sufficiently strong and stiff for purposes requiring great solidity. The heart, if perfectly seasoned, long resists the action of the atmosphere, and is said to be rarely attacked by worms. Its greatest defect is, that, when employed in wide boards, and exposed to the weather, it is liable to shrink and warp, from the alternations of dryness and moisture. The nature of the soil has such an influence upon the color and quality of the wood, that mechanics distinguish two varieties, the white and yellow poplar, the former of which is always neglected when the other can be procured. At New York, Philadelphia, and in the adjacent country, this wood is employed in the construction of houses, for rafters and the joists of the upper stories, for which purposes it is esteemed on account of its lightness and strength. In other parts of the Middle States, in the upper parts of the Carolinas, and especially in the Western States, it is more generally used in building, and is considered the best substitute for the pine, red cedar and cypress. Wherever it abounds, it serves for the interior work of houses, and sometimes for the exterior covering in situations where it is difficult to procure pine boards. The panels of doors and wainscots, and the mouldings of chimney-pieces, are made of this wood. In the upper part of North Carolina, Ohio, Kentucky, &c., the shingles of this wood are preferred, because they are the most durable, and are not liable to split by the effect either of intense frosts or a hot sun. In all the large towns of the U. States, the boards, which are often two or three feet wide, are exclusively used for the panels of coaches and chaises. When perfectly dry, they receive paint well, and admit of a brilliant polish. They are exported to the Southern as well as the Eastern States for this purpose. The seat of Windsor chairs, which are made in New York, Philadelphia, Baltimore, &c., is always of this wood. A very large quantity of the timber is consumed in this way, as also in the manufacture of trunks and bedsteads, which last are stained in imitation of mahogany. The circular board and wings of fanning-mills are of this wood. As it is very light, and easily wrought in the lathe, it is much used for wooden bowls: it is also preferred for the head of hair-brooms or sweeping-brushes: farmers select it for the eating and drinking troughs of their cattle: in Kentucky, it is sometimes employed for rails: it is found useful in the construction of wooden bridges, from uniting lightness with strength and durability: the Indians of the Middle and Western States preferred this tree for their canoes, which are made of a single trunk, are very light and strong, and sometimes carry twenty persons:—in fine, the tulip-tree affords excellent charcoal, which is employed by smiths in districts which furnish no stone-coal. These are some of the more common purposes to which this wood is applied. The lumber-yards of New York, Philadelphia and Baltimore contain a great quantity of this wood in different forms. It is very cheap, being sold at half the price of black walnut, wild cherry and curled maple. In all the country watered by the Monongahela, this tree is extremely abundant, and large rafts, composed wholly of its timber, are floated down the stream to Brownsville, where the logs are sawed into boards, and used in the environs, and even at Pittsburg, in the construction of houses.

Tullus Hostilius; according to the common statement, king of Rome and successor of Numa Pompilius, B. C. 672; a warlike monarch, in whose reign took place the combat of the Horatii and Curiatii. (See *Horatii.*) He afterwards subdued the Albans by treachery. He likewise conquered the Fidenates and Sabines. In his old age he became superstitious. His death, after a reign of thirty-three years, is ascribed by some to lightning, by others, to Ancus Martius, his successor. (See Neibuhr's *Roman History.*)

Tully. (See *Cicero.*)

Tumuli, or Barrows, are the most ancient and general of all monuments to the dead. The earliest barrow of which we read is that which Homer mentions as having been formed over the remains of Patroclus. That of Achilles is still, as it was originally designed to be, a distant sea mark. By the Athenian customs, earth was heaped on the dead by the nearest relations, and corn was then sown on the barrow. The Scythians heaped huge barrows over the bodies of their kings. The height of the mound was in proportion to the honor intended to be paid to the deceased. The steppes of Tartary are thickly covered with barrows. In vol. 2d of the *Archæologia*, a Tartarian barrow is mentioned, in which were found two corpses wrapped in four sheets of gold. The weight of the gold was forty pounds. The famous Irish barrow at New Grange, described by governor Pownall (*Archæologia*, 2d, 236), is in the county of Meath. It consists of small pebbles. The base covers two acres. The circumference at the top is 300 feet, height 70. There is a gallery within it sixty-two feet long, leading to a cave, which intersects the gallery transversely, so as to form a cross. The length and height of the cave are each twenty feet, the breadth eleven feet six inches. Barrows of loose stones or of dark mould and flints are very common in England. Ashes, urns, spears, swords and shields, bracelets, beads, mirrors, combs, and hair-pins, are among the principal contents. Denmark, Sweden, Lower Saxony, and many other countries on the continent, abound with sepulchral monuments of this kind. To the north of the Hottentots, innumerable barrows are described as having been seen by doctor Sparrow (*Travels*, 2d, 264). In New Caledonia, Mr. Forster met with a barrow four feet high, surrounded by an enclosure of stakes. Mr. Oxley, in 1817—1818, found in the interior of New South Wales two native burial-places. The principal one showed much labor. The form was semicircular. Three rows of seats formed one half; the grave and an outer row of seats, the other. The seats constituted segments of circles of from forty to fifty feet, and were raised by the soil being trenched up between them. The grave was an oblong cone, five feet high and nine long. The barrow was supported internally by a sort of wooden arch. The body was wrapped in a great number of opossum skins, covered with dry barb grass and leaves, and lay about four feet below the surface. In the valley of the Mississippi, *tumuli*, or mounds of earth, are found in great numbers, of the origin and uses of which we are yet ignorant. Similar constructions are also found in Mexico. (See Humboldt's *Monuments of the Natives of America.*) The mounds in the Mississippi valley have been found to contain bones, and are said to be composed of earth different from that of the surrounding country. They exhibit no trace of tools, and are, in fact, merely regular piles of earth, without brick or stone. They are commonly situated in rich plains and prairies. There is one near Wheeling, seventy feet in height, and thirty or forty rods in circumference at base, and 180 feet at top. There is a numerous group near Cahokia, stated at about 200 in all, the largest of which is a parallelogram, about ninety feet high, and 800 yards in circuit. It has been asserted the skulls found in these mounds bear a striking resemblance to those found in Peru.

Tunbridge Wells; a town of England, in Kent; thirty-five miles from London. It is an appellation given to a series of scattered villages, which are nearly two miles in length, and owe their origin and importance to the celebrated mineral waters in the vicinity, consisting of four divisions, Mount Ephraim, Mount Pleasant, Mount Sion, and the Wells, properly so called. The air of this district is remarkably pure and salubrious, the appearance of the country inviting, and the aspect of the villages picturesque, appearing like a large town in a wood, interspersed with rich meadows, and enclosing a large common, in which are walks, rides, handsome rows of trees, and various other objects. Here are excellent accommodations for visitants, also assembly rooms, a theatre, libraries, chapel, market place, &c. The waters are chalybeate (see *Mineral Waters*), extremely clear and pellucid at the fountain head, and the taste is strongly impregnated with iron. They are of great use in removing complaints arising from sedentary habits, weak digestion, and nervous and chronic disorders. The discovery of their virtue is ascribed to Dudley lord North, a courtier in the reign of James I, who was restored to health by drinking them. A variety of toys in wood of various kinds is manufactured here, and known by the name of *Tunbridge ware*. The high rocks, one mile and a half from the wells, are much celebrated. In some parts they are seventy-five feet high, and form a very striking and romantic picture.

Tune. (See *Tone*, and *Melody*.)

Tungsten; one of the metals, so named from the Swedish word *tung*, heavy, in allusion to the great specific gravity of the mineral in which it was first detected as an ingredient. The ores of this metal are three, viz. *wolfram*, *tungsten*, and *yellow oxide of tungsten*. 1. *Wolfram* occurs in short, highly modified prisms, whose primary form is a right oblique-angled prism, the larger angle of the lateral planes being 117° 22′. The secondary forms are produced through the replacement of the lateral edges and of the longer terminal edges. Cleavage parallel to the primary form, perfect; surface of the crystals streaked parallel to the axis; lustre metallic adamantine, or imperfect metallic; color dark grayish, or brownish-black; streak dark reddish-brown; opaque; not very brittle; hardness between apatite and feldspar; specific gravity 7.15. Besides occurring in single crystals, it occasionally presents itself under the form of twin-crystals, and massive. The massive varieties are irregularly lamellar, sometimes columnar. It is also found in pseudomorphs, in the shape of tungsten. It consists of

Tungstic acid,	78.77
Protoxide manganese,	6.22
Protoxide iron,	18.32
Silex,	1.25

It decrepitates before the blow-pipe, but may be melted, in a sufficiently elevated temperature, into a globule, having its surface covered with crystals possessing a metallic lustre. It is easily soluble in borax. Wolfram occurs very frequently along with tin ore, in veins and in beds. It is met with also in veins along with galena. Its localities are the Saxon and Bohemian tin mines, as at Schlackenwald, Zinnwald, Ehrenfriedersdorf and Geyer; also many places in Cornwall. It is also found in France and Siberia. It has one locality in the U. States, at Munroe, Connecticut, where it is found in a bed of quartz, both crystallized and pseudomorphous, accompanied by galena, blende, native bismuth, and the other ores of tungsten. 2. *Tungsten* is found in crystals of an octahedral figure, and depending upon a primary form, which is an acute octahedron, the upper pyramid inclining to the lower one under an angle of 128° 40′, parallel with whose faces it cleaves, and also with the faces of an octahedron less acute. The surfaces of the crystals are commonly drusy; lustre vitreous, inclining to adamantine; color generally white, often inclining to and passing into yellowish-gray, yellowish and reddish-brown; streak white; semi-transparent to translucent; brittle; hardness a little above that of fluor; specific gravity 6.07. Besides the crystals, tungsten is found massive. It consists of lime 19.40 and tungstic acid 80.42. Alone upon charcoal, it is infusible before the blow-pipe, except that the thinnest edges are converted, in a very strong heat, into a semitransparent vitrified mass. It gives a white glass with borax. It is found in similar repositories with wolfram. The principal localities of tungsten are Schlackenwald and Zinnwald in Bohemia, Ehrenfriedersdorf in Saxony, and Cornwall, England. Splendid specimens have lately been found at Carrock in Cumberland. In the U. States it occurs at Munroe, Connecticut, along with wolfram, in large imperfect crystals imbedded in quartz, and massive, in pieces of considerable dimensions. 3. *Yellow oxide of tungsten* is found in the state of an orange-yellow powder investing tungsten, from whose decomposition it appears to result. It is readily soluble in warm liquid ammonia, and is precipitated white by acids; the precipitate, by standing, reacquiring the yellow color. It has only been met with at Munroe, Connecticut. The easiest method of obtaining *tungsten* in the *metallic state* is the following:—Fuse together a mixture of wolfram and carbonate of potash in a crucible. Then digest the fused mass in water, which will dissolve the tungstate of potash formed. To this solution add a quantity of solution of sal-ammoniac in water, and evaporate the whole to dryness. Put the dry saline residue into a Hessian crucible, and heat till the sal-ammoniac is entirely dissipated. The residual matter being now dissolved in hot water, a heavy black powder separates, which is oxide of tungsten. Let it be boiled in a weak solution of potash, and, finally, in pure water. When this powder is heated in an open crucible, it takes fire, and is converted into tungstic acid. The affinity of tungsten for oxygen not being very strong, it is easily reduced to the metallic state by passing a current of dry hydrogen gas over tungstic acid, heated to redness in a glass tube. Thus purified, tungsten (*scheelium* of the Germans) is of a grayish-white color, or rather the color of steel, and is possessed of considerable brilliancy. It is one of the hardest of the metals, it being almost impossible to make an impression upon it by the file. It seems also to be brittle. Its specific gravity is 17.6. It is therefore the heaviest of the metals after gold, platinum and iridium. It requires for fusion a very high temperature. It is not attracted by the magnet. When heated in an open vessel, it gradually absorbs oxygen, and is converted into an oxide. Tungsten seems capable of combining with oxygen in two different proportions, and of forming the brown or *black oxide*, and the yellow, or *tungstic acid*. The first of these is obtained by putting a quantity of tungstic acid in a glass tube, heating it to a very low red heat, and passing through it, while in that state, a current of hydrogen gas. Water is formed, and the acid is deprived of a portion of its oxygen. The oxide has a flea-brown color, and, when heated in the open air, takes fire, and burns like tinder, and is converted into tungstic acid. This oxide has the power of uniting with soda, and would appear to play the part of an acid. The tungstic acid, obtained as described above, has a pale lemon-yellow color. When strongly heated, it becomes green, as it does also when exposed to the rays of the sun. Its specific gravity is 5.6. It is tasteless, insoluble in water, but is very soluble in the caustic alkalies. It has the property of combining with other acids. When precipitated from tungstate of ammonia by an acid, the precipitate is always a compound of tungstic acid and of the acid employed to throw it down. Tungsten forms three compounds with *chlorine*, all of which are chlorides. It combines also with phosphorus and sulphur. According to the trials of Gmelin, tungsten, even when in the state of an acid, has no injurious effect on the animal economy, when taken internally.

TUNGUSES; a numerous people in Siberia, of Mantchoo origin (see *Mandshures*), dwelling in the lower regions of the Yenisei, on the Tungusca, the Lena and the Amour. Those beyond the Amour are under the protection of China; those to the north under that of Russia. Some of the Tunguses are converted to Christianity, and practise agriculture; but the most are devoted to Shamanism, and rove about with horses, reindeer, or dogs, which draw their sledges and serve them for food, rarely spending more than one or two nights in the same place. Hunting, fishing, and in some cases the breeding of cattle, are their employment. They are divided, according to the nature of the country which they occupy, into the Tunguses of the steppes and the Tunguses of the forests. The former are shepherds, and own horses, neat cattle, sheep, goats and camels. They are active and vigorous, and are remarkable for the flatness of their faces, and the smallness of their eyes. They have no money, and are unacquainted with the use of silver and gold. They pay their tribute to the Russian government in furs. Some of the small tribes serve as light troops on the Mongolian frontiers, and are exempt from tribute. All the Tunguses have a common language, and, although so much dispersed, are to be considered as forming one nation. Their number is uncertain.

Tunic; a garment worn by the Romans of both sexes, under the toga and next to the skin. It was generally of wool, of a white color, and reaching below the knee. Several tunics were worn one above another. Only slaves and the lower class of the people appeared abroad in the tunic; but at home, the Romans generally wore only the tunic, which they girded up when going out, or when engaged in business. The senators wore a tunic with a broad stripe (*clavus*) of purple sewed on the breast: the equites had narrow stripes. Hence the terms *laticlavii* and *angusticlavii*, applied to persons of these orders. A sort of tunic worn by the women under another made of linen, and having sleeves, was called *indusium*, and much resembled the modern shirt.

Tunis; one of the Barbary states in Africa, bounded north by the Mediterranean, east by the Mediterranean and Tripoli, south by Tripoli and the deserts, and west by Algiers. It consists chiefly of a large peninsula, stretching into the Mediterranean in a north-east direction, and coming within a hundred miles of the coast of Sicily. It has an extent of about 500 miles of coast on the Mediterranean; and the cultivated part reaches 200 or 250 miles into the interior, till it terminates with the chain of Atlas and desert plains. Square miles, about 72,000; population variously estimated from one to two millions, of which about 100,000 are Jews. (See *Barbary States.*) Tunis is watered by the river Mejerdah, or Bagrada, on the banks of which are many towns and large villages. Its banks, and the country to the eastward, are fertile, of great natural beauty, and are the best cultivated parts of the country. The western part is more thinly inhabited, and, in many places, is almost a desert. The mountains of Tunis contain mines of silver, copper, lead and quicksilver, but they are not wrought. The situation of the country is very favorable for commerce, and the amount is considerable. The exports consist of grain, the principal article, next olive oil, wool, soap, sponge and orchilla weed; also, gold dust, ivory, and ostrich feathers, brought by caravans from Timbuctoo. The imports are European manufactures, colonial produce, and East India cottons. Tunis, the capital, has a population estimated at from 100,000 to 150,000, of which about 30,000 are Jews. It is 300 miles east of Algiers. It is situated at the bottom of a large bay, about ten miles south-west of the site of ancient Carthage, on a plain, surrounded on all sides, except the east, by considerable heights, encircled by lakes and marshes. It is built in a most irregular manner, and the streets are extremely narrow and filthy. The principal structure is the palace of the bey. There is one great mosque, and a number of smaller ones, with several colleges and schools; and near the centre is a piazza of vast extent, said to have formerly contained 3000 shops for the sale of woollen and linen manufactures. The houses belonging to European consuls are all insulated habitations, resembling prisons. The Moorish houses are of only one story, with flat roofs, and cisterns for the purpose of collecting rain water. The city is well supplied with water, by an aqueduct. Large sums have been expended in the construction of forts, and in surrounding the city with a high wall; yet it is by no means a strong place. The citadel, called *El Gassa*, is much out of repair. Six miles to the west is the Goletta, the harbor and citadel of Tunis, and the naval and commercial depot of the state. It is strongly fortified. A basin has been formed sufficient to receive all the vessels of war and merchant ships belonging to Tunis. A lake extends from the city to the Goletta. Tunis has a more extensive commerce than any other town in Barbary. After Tunis, Cairwan is the chief commercial place: it contains a large mosque, considered the most holy in Northern Africa. At Bersach (perhaps Byrsa, the ancient citadel of Carthage) are seen the ruins of a Carthaginian aqueduct. After the destruction of Carthage, the Romans built a new city, near the site of the modern Tunis: it was peopled with Roman colonists, and soon became one of the most important cities of the ancient world. This being destroyed by the Saracens, Tunis, before an insignificant place, rose to importance. The Normans of Sicily afterwards possessed themselves of the city, but they were driven out of the country by Abdalmamum of Morocco. In 1530, the state was disturbed by domestic troubles, of which Charles V availed himself to undertake his celebrated expedition to Africa. He defeated the Turks, who had made themselves masters of Tunis under Hayradin Barbarossa, and forced his way into the city. (See *Barba-*

rossa, *Charles V*, and *Barbary States*.) In 1574, the Algerine Turks obtained possession of Tunis, and established a Turkish regency and a military constitution. An aga presided over the divan, or principal council, and a pacha exercised the supreme power in the name of the grand seignior. A military revolution soon after occurred, which placed the chief power in the hands of a dey. At present, the head of the government is styled *bey;* the present bey, Sidi Hassan, succeeded Hamonda Bey in 1824. The bey of Tunis acknowledges the sovereignty of the grand seignior, by the annual payment of tribute under the name of a present; but the latter has no authority in the government. The revenue is estimated at about $4,000,000: the land force amounts to 15,400 men, and the navy consists of about twenty corsair ships. In case of emergency, the bey can raise 50,000 irregular Bedouins. (See *Ottoman Empire*, and *Turkey*.)

TUNKERS, and TUNKERSTOWN. (See *Ephrata*.)

TUNNY; a fish belonging to the family of the mackerel, or the genus *scomber* of Linnæus. It attains large dimensions, weighing a hundred pounds, and often considerably more. The body is covered with small scales; is thick, rounded, spindle-shaped, and has a prominent carina, or keel, on each side of the tail. The colors are brilliant, but not much varied: the back resembles polished steel; the under parts are silvery; all the fins are yellow except the first dorsal. These fish live in shoals, in almost all the seas of the warmer and temperate parts of Europe, Asia, Africa and America, but are not equally common in every season or in all parts of the seas which they frequent. Immense numbers enter the Mediterranean by the straits of Gibraltar, and immediately divide, one part following the shores of Europe and the other those of Africa, in search of a place to deposit their spawn. They penetrate into the Black sea; and it is remarkable that they follow the right shore of the Bosphorus in going, and the left in returning—a circumstance which induced some of the ancients to suppose that they saw more clearly with the right eye than the other. At the approach of winter they retire to deep water. They often, besides, undertake irregular migrations. In sailing from Europe to America, they have been known to accompany vessels for more than forty days. The tunny is very voracious, and consumes a great quantity of food. Its animosity against the mackerel is well known: it is sufficient to present a rough image of this fish to draw it within the nets. It is taken in immense quantities in large nets. The flesh somewhat resembles veal, is delicate, and has been in request from time immemorial. It forms an extensive branch of commerce in the Mediterranean, and not less than 45,000 are taken annually on the coasts of Sardinia alone. Stations have been established, in elevated places, for watching the approach of the tunny, from the most remote antiquity. This fish rarely visits the northern coasts of Europe in shoals, though solitary individuals are not unfrequent.

TUPAC AMARU is the name of several Peruvian Indians, of the family of the incas. The subject of this article is José Gabriel Tupac Amaru, cacique of Tungasuca, in the province of Tinta, in Lower Peru. His original name was José Gabriel Candor Canqui; but, being directly descended, by the maternal line, from Tupac Amaru, son of Manco Capac, the last of the reigning incas, he assumed the name of his ancestor, and became celebrated for his attempt, in 1780, to reestablish the empire of the Sun. He endeavored, in the first place, to obtain some alleviation of the intolerable oppressions which the Indians suffered. Finding this impracticable, he proceeded from one step to another, until he and his immediate dependants took up arms, and put to death Arriaga, the corregidor of Tinta, November 10, 1780. This act was the signal for a general rising of the Indians, who proclaimed the abolition of the *mita*, *repartos*, and other odious forms of taxation and bondage, and kindled a civil war through the southern and upper provinces of Peru. Tupac Amaru now assumed the imperial *borla*, and other insignia of the incas; and a desperate attempt was made by the Indians to regain their independence. The war raged with various success for two years, but ended in the subjugation of the Indians. Many cities in Upper Peru, particularly La Paz and Oruro, suffered greatly during this war, which both parties regarded as a struggle for life and death, and in which one third of the whole population of the country is supposed to have perished. José Gabriel was taken prisoner early, and put to death, being torn asunder by four wild horses. But the Indians rallied anew under his brother Diego Cristobal, and his nephew Andreas, who, aided by a chief of obscure origin, named Tupa Catari, were near overcoming the Spanish power. The new leaders, however, were at length subdued, and, in violation of solemn engagements, were executed as traitors. See *Funes Paraguay* (vol. iii, p. 242).

Tupelo (*nyssa*); a genus of forest trees peculiar to North America, and almost strictly confined within the territory of the U. States. The leaves are simple, alternate, and mostly entire; the flowers greenish and inconspicuous, disposed at the extremity of a long peduncle; the fruit is a drupe, containing a hard stone. The natural family to which it belongs has not yet been clearly determined. The flowers are diœcious.—The black, yellow or sour gum (*N. villosa*) is found in all parts of the U. States south of the forty-first parallel of latitude. It is distinguished by the hairiness of the leaf-stalks, and by having the fertile peduncles 3—6 flowered. The leaves are five or six inches in length; the fruit small, oval, and of a deep-blue color. It attains the height of sixty or seventy feet, with a trunk eighteen or twenty inches in diameter. On high grounds, this tree has no peculiarity of form; but, in the lower parts of the Southern States, where it grows only in wet places, the base of the trunk is enlarged, and has a regular pyramidal shape. The wood is fine-grained, but soft: the fibres are not straight, but are interwoven and collected in bundles, which arrangement is peculiar to this genus, and renders the timber exceedingly difficult to split. Throughout the greater part of Virginia, this wood is employed for the naves of coach and wagon wheels; and, at Richmond, Baltimore and Philadelphia, it is preferred for hatters' blocks. In the Southern States, it is used in rice-mills for the cylinder which receives the cogs. It is also chosen by shipwrights for the cap or piece which receives the top-mast. For all these uses, the following species is equally well adapted: *N. biflora*, called, indiscriminately, *tupelo*, *gum-tree*, or *sour-gum*, differs from the preceding in having the fertile flowers disposed in pairs, and the leaf-stalks less hairy. It is, besides, a much smaller tree, rarely exceeding forty or forty-five feet in height; and the limbs are given out at the distance of five or six feet from the ground, and spread horizontally. It is found farther north, being not unfrequent at the forty-third parallel of latitude, but is most abundant in the Middle States. It is seen only in the vicinity of wet places, growing constantly along the margin of swamps. The fruit is deep-blue, about as large as a pea, and becomes conspicuous after the fall of the leaves. It is a great resource for the American robin in its migrations at the approach of winter. The wood holds a middle place between soft and hard-wooded trees, and, on account of the interlacing of the fibres, and consequent extreme difficulty of splitting, is preferred for certain purposes. In New York, New Jersey, and particularly at Philadelphia, it is exclusively employed for the naves of wheels destined to bear heavy burdens. In Europe, it could not be advantageously substituted for the variety of the elm called *twisted elm;* but, in the opinion of Michaux, if it attained three or four times its present dimensions, and, besides, grew on elevated grounds, it would be the most precious to the mechanical arts of all the forest trees of Europe or North America. As fuel, it is esteemed for burning slowly, and diffusing great heat; and, at Philadelphia, it is customary to select a certain quantity for logs.—The large tupelo (*N. tomentosa*) is a lofty and beautiful tree, inhabiting the southern parts of the U. States. It grows in wet swamps, and rises to the height of seventy or eighty feet: the trunk is enlarged at the base in an extraordinary manner, and is often eight or nine feet in diameter at the surface of the ground: above this conical base, the trunk is only fifteen or twenty inches in diameter, and maintains this thickness for twenty-five or thirty feet. The leaves have a few large teeth, by which character it is easily distinguished. The fruit is solitary, about the size and shape of small olives, and is preserved, like them, by the French inhabitants of the Mississippi. The wood is extremely light, and softer than that of any other tree in the U. States. It is used only for bowls or trays. The roots, also, are tender and light, and are sometimes employed by fishermen, instead of cork, to buoy their nets.—The Ogechee lime (*N. candicans*) is not found north of the Ogechee river, in Georgia. The fruit is an inch or an inch and a half in length, of a light-red color, thick-skinned, intensely acid, and contains a large oblong stone. It might be used as a substitute for the lime, were it not that the latter tree succeeds perfectly in the same countries, and is preferable on many accounts. It is of small size, rarely exceeding thirty feet in height, with a trunk seven or eight inches in diameter. The wood is soft, and is not used on account of its small dimensions. There is a remarkable dissimilarity in the mode of growth between the male and female plants: the branches of the former ascend perpendicularly, while those of the latter assume a horizontal direction.

Turban (in Turkish, *dulbend*, *tulbend*); a covering of the head, worn by most nations in the East, and of very various forms in different nations and different classes in the same nation. It consists of a piece of cloth wound round a cap. The Turkish sultan's turban contains three heron's feathers, with many diamonds and other precious stones, and the Turks honor it so much that they touch it with awe. A particular officer, *tulbend aga*, takes care of it. The grand vizier has two heron's feathers; other officers but one. The emirs wear a green turban—a privilege which they enjoy as relations to the prophet and to Ali.

Turbot (*pleuronectes maximus*). This species of flounder is second in size only to the halibut. In the excellence of its flesh, it is decidedly the first of the genus. It is common along the coasts of Europe, even in the northern seas, but, unfortunately, does not visit our western shores. It often weighs twenty-five or thirty pounds, and is generally very abundant in its favorite localities. It is taken in deep water by lines, some of which are three miles in length, and are furnished with more than two thousand hooks. The flesh is exquisitely flavored and nutritious, though rather difficult of digestion. This fish, with several others, has been separated from the true flounders on account of the length of the dorsal and anal fins, and its having the eyes placed to the left. We have species belonging to this subdivision on our own coasts.

Turcomania; a name sometimes given to Turkish Armenia, as the Tartar tribes, who inhabit it, are also sometimes called *Turcomans*. The more proper name of the people is *Curds*, and that of the country *Curdistan*. (See *Curds*.) The name is also sometimes applied to the country between the Caspian and Aral seas, the country of the Turkmans, or Turcomans. (See *Turkestan*.)

Turcomans. (See *Turkestan*.)

Turenne, Henri de la Tour d'Auvergne, vicomte de, a renowned French commander, born in 1611, at Sedan, was the second son of Henri de la Tour d'Auvergne, duke of Bouillon, and of Elizabeth, daughter of William I, prince of Orange. The favorite books of the young Turenne were the lives of great commanders, and particularly the history of Alexander by Curtius. Under his uncle, prince Maurice of Nassau, he studied the art of war, and, in 1634, received the command of a French regiment, served at the siege of Lamothe, in Lorraine, under marshal la Force, and took a bastion, which the son of the marshal had in vain attempted to occupy. For this he was appointed field-marshal; and, having also performed important services at the taking of Brisach, the cardinal Richelieu offered him one of his nieces in marriage—an offer which Turenne declined on account of his attachment to the Protestant religion, in which he had been educated. In 1639, he was sent to Italy, where he raised the siege of Casale, and defeated the enemy near Montcallier, while the marshal d'Harcourt besieged Turin. In 1643, he conquered Roussillon, and was rewarded, in 1644, with a marshal's baton and the chief command of the army in Germany. He crossed the Rhine, defeated the Bavarians, under Mercy, and joined the duke d'Enghien, was defeated (1645) at Mergentheim (Marienthal), but, three months after, gained a victory at Nordlingen. In 1645, having formed a junction, after a march of 150 French miles, with the Swedes, under Wrangel, he defeated the Bavarians at Zusmarshausen, fell upon Bavaria, and compelled the duke to sue for peace. This prince having afterwards broken his engagements, his army was once more beaten by Turenne, and he himself was driven out of his territories. In the war of the Fronde (q. v.), 1649, Turenne was at first gained over, by the duke of Bouillon, to the party opposed to the court. In 1650, being defeated by the marshal du Plessis-Preslin, near Rhetell, he candidly confessed that he had lost the battle through his own negligence, for, he added, if any one commit no faults in war, it is a proof that he has not had long experience in it. The Spanish court, in order to encourage him to continue the war, sent him 100,000 crowns; but this sum Turenne returned, as he expected to be reconciled to the court party. This reconciliation took place in 1651, and Turenne was now appointed general of the royal army. His great adversary was the duke d'Enghien, afterwards prince of Condé, who was in the Spanish service. These two commanders carried on the war with alternate success, until at length Turenne, by the taking of Dunkirk and the occupation of a great part of Flanders, enabled cardinal Mazarin to conclude the peace of the Pyrenees. In 1653, he married the daughter of the marshal and duke de la Force, a Protestant lady; but she bore him no children. On the renewal of the war with Spain, in

1667, Louis XIV selected marshal Turenne for his teacher in the art of war, gave him the title of marshal-general of the French army, and made him his lieutenant-general. Flanders and Franche-Comté were subdued, and Turenne joined the Catholic church in 1668. The Catholics consider this religious change as the result of conviction; the Protestants, on the contrary, attribute it to ambitious views; Voltaire, perhaps more impartial than either, says, "The conversion of Turenne was perhaps sincere. The human heart frequently unites policy, ambition, and the weakness of love, with religious ideas." When Louis XIV, in 1672, resolved on the conquest of Holland, Turenne was appointed again to the chief command, and compelled the elector Frederic William of Brandenburg, who assisted the Dutch, to sign the peace of Vossem. Turenne appeared on all occasions very honorable and disinterested. When a general made a proposal to him, by the execution of which he might have obtained 400,000 livres, he answered that he had often rejected such proposals, and would not alter his course. A city offered him a present of $100,000, to induce him not to march through its territory. "As your city," answered Turenne, "does not lie in my route, I cannot accept your offer." After the occupation of Franche-Comté, he defended the borders of this district, and, in 1674, crossed the Rhine at Philippsburg, conquered Sinzheim, and drove back the imperial army, under Caprara and the duke of Lorraine, even to the Maine. He then turned his arms against the prince of Bournonville, who had arrived with fresh troops, defeated him also, and prevented his junction with the imperial army. The imperialists fell upon Alsace, with 70,000 men, and besieged Brisach and Philippsburg. Turenne had only 20,000 men, but was strengthened by Condé. He then continued his march over mountains covered with snow, and was in the midst of the hostile army, in Upper Alsace, when they supposed him in Lorraine. He dispersed, without any important battle, the numerous army which opposed him, protected Alsace, and compelled the Germans to retire over the Rhine. The confidence of the soldiers in him was almost boundless; and this enabled him to accomplish great enterprises. The glory which Turenne obtained in this campaign, was the greater, as he followed his own views entirely, and not the commands of the king. But the dreadful devastation of the Palatinate tarnished his fame; and we are inclined to believe that, in this measure, he obeyed the commands of the ministry in opposition to his own opinion. "After the battle of Sinzheim," says Voltaire, "Turenne laid waste the Palatinate (a level and fertile tract) with fire and sword. The elector of the Palatinate saw, from his castle at Manheim, two cities and twenty-five villages in flames. Reduced by this sight to despair, he sent a challenge to Turenne in a letter full of reproaches. The marshal gave the letter to the king, who forbade the acceptance of the challenge; and Turenne accordingly answered it by an unmeaning compliment. He was accustomed to express himself with moderation and ambiguity. He also permitted a part of the cornfields of Alsace to be laid waste in cold blood, in order to deprive the enemy of the means of subsistence, and allowed his cavalry to ravage Lorraine. He preferred to be the father of the soldiers intrusted to him, rather than of the people, who, according to the laws of war, are always the victim. Turenne's extraordinary fortune induced the imperial court to oppose to him their best general; and Montecuculi was sent, in 1673, over the Rhine. After a variety of skilful movements, they were about to come to an engagement at Sassbach, in Baden, when Turenne, while reconnoitring for the purpose of finding a place for the erection of a battery, was killed by a cannon ball. The same ball carried away the arm of general de St. Hilaire, who, upon his son's bursting into tears at the sight, exclaimed, "Not for me, but for this great man, must you weep." The highest honor was shown by the king to the remains of Turenne. They were interred, like those of the constable du Guesclin, at St. Denis. Turenne possessed, under a rough and ordinary exterior, a great mind. His disposition was cold. His manners were decorous and simple. He was not always fortunate in war, and committed some faults; "but," says Voltaire, "he always repaired them, and accomplished much with small means." He was esteemed the most skilful commander in Europe, even at a time when the art of war was more studied than it had ever been before. Although reproached for deserting his party in the war of the Fronde; although, at the age of nearly sixty years, he suffered himself to be seduced by love to disclose a secret of state; although he committed unnecessary cruelties in the Palatinate,—yet he maintained the reputation of a man of veracity, wisdom and moderation; for his virtues and talents covered the weaknesses and faults which he had in common with so many others. (See *Condé*, *Fronde*, *Montecuculi*, and *Louis XIV*.)

Turgot, Anne Robert Jacques, a patriotic and enlightened French minister, son of the president of the grand council, was born at Paris, in 1727, and, in his youth, gave himself up to the study of theology at the Sorbonne. At the age of twenty-four, he commenced a translation of Virgil's Georgics, and, soon after, attaching himself to Quesnay and the Economists (see *Physiocratic System*), quitted the Sorbonne in order to accompany De Gournay, intendant of commerce, in his travels. On his return, he was himself appointed intendant of Limoges, which post he occupied for twelve years, and was long remembered with gratitude, for his wise, salutary and benevolent reforms and regulations. When raised to the post of comptroller-general of the finances (1774), he gave a wider extent to the principles of amelioration. He moderated the duties on articles of the first necessity, without loss to the revenue; freed commerce from many fetters, and encouraged industry by enlarging the rights of individuals, and abolishing the exclusive privileges of companies and corporations. He also formed a project for commuting the feudal rights, for rendering salt an article of free merchandise, and for reforming the royal household. His reward for these useful and benevolent views was opposition and ridicule. He was, however, able to carry into effect some very important improvements; but as he endeavored to control the nobility, restrict the clergy, and restrain the license assumed by the officers of the crown, they all united against him. The result was, his dismissal from office, in 1776, from which period he lived a retired and studious life until his death, in 1781, at the age of fifty-four.

Turin, or Torino (anciently *Augusta Taurinorum*); the chief city of Piedmont, the capital of the Sardinian monarchy, on the west side of the Po, 75 miles south-west of Milan; lon. 7° 40′ E.; lat. 45° 4′ N.; population, 117,987. It has an agreeable situation on a delightful plain, in a luxuriant country; a beautiful range of hills rising on one side of the river; on the other, a plain strewed with villas and gardens, extending to the base of the Alps. The town is of an oblong form, and, including the ramparts, four miles in circuit. The streets are generally wide and straight, intersecting each other at right angles, and running in direct lines from one extremity of the city to the other. They are kept clean by means of streams of clear running water. The principal square, called *Piazza Reale*, both for size and beauty, ranks as one of the first in Europe. Several of the streets have, at the sides, arcades or piazzas, affording a convenient walk for foot passengers. The houses are generally of brick, and the best are plastered in front with stucco. Of the public walks, the most frequented are the public gardens. The public edifices of Turin are built or ornamented with marble of every vein and color. The palace has fine gardens, which are used as public walks, and command fine prospects. The university (811 students) has a good library, an observatory, a natural cabinet, a botanical garden, and a rich Egyptian museum, containing the collections of Drovetti, papyrus rolls, mummies, statues, inscriptions, &c. (See Champollion's *Lettres rélatives au Musée royal Égyptien de Turin.*) After the battle of Marengo (1800), Turin became the capital of the French department of the Po, and was restored to Sardinia in 1814.

Turkestan, or Turkistan (i. e. *land of the Turks*), is used, in a wider sense, to signify all the country between Russia to the north, the Caspian sea to the west, the Chinese dominions to the east, and Afghanistan to the south. This description answers to the Independent Tartary of geographers (see *Tartary*), and includes an extent of country about 850 miles from north to south, and 700 from east to west. The chief divisions of this region are Turcomania, between lake Aral and the Caspian sea; Turkestan, in a narrower sense, to the east of lake Aral; Usbekistan, or Bucharia, to the south; and the country of the Kirghises, on the north. The two last mentioned divisions are described under the heads *Usbecks*, *Bucharia* and *Kirghises*.—1. Turcomania, or the land of the Turkmans, or Truchmens, consists chiefly of sandy steppes, destitute of water, but contains some fertile districts, and some mountainous tracts. It produces corn, but the principal employment of the inhabitants is breeding cattle. Camels, horses, neat cattle, sheep, goats, game, birds, and fish, of various sorts, are found here. The inhabitants are of Tartar origin, and are rude, ignorant, and ardently attached to freedom. They are Mohammedans. Turcomania, with Khiva, corresponds to the ancient Chorasmia (Khowaresm, or Charasm), formerly the seat of a civilized Arabian state, overturned by Gengis Khan (1220), and Timour (1388). The inhabitants are Truchmens, Khiwintzes, and Karakalpacs, Tartar hordes, who are subject to the Usbecks. The chief city, Khiwa, or Khiva, contains a population of about 10,000 souls.—See Mauraview's *Voyage en Turcomanie et à Khiwa, en* 1819 *et* 1820 (from the Russian, Paris, 1823), and Meyendorf's *Voyage d'Orenbourg à Boukhara* (Paris, 1826). 2. Turkestan, or land of the Turks, is inhabited by Usbecks, Bucharians, Turcomans, Kirghises and Jews. It is now subject to the khan of Kokan, who was formerly dependent upon Bucharia, but is now independent. Kokan, the ancient Ferghana, is little known. The Turkestanese speak the purest Turkish. (See *Ottoman Empire*, and *Turkish Language*.)

TURKEY (*meleagris gallo-pavo*). The wild turkey was formerly abundant in Canada, and in many of the now thickly-settled parts of the U. States. It is still common in the wooded parts of the west, on the Ohio, Mississippi and Missouri; but the day is, perhaps, not far distant when it will be rare even there. It is yet found occasionally in Carolina, Georgia and Florida, more rarely in West Pennsylvania and Virginia, and may be considered altogether extinct in the remaining Northern and Eastern States. It is occasionally brought to the New York and Philadelphia markets; but a domestic variety, of a very superior metallic tint, and closely resembling the wild one, is more frequently sold in its place. Wild turkeys feed on berries, fruits, grasses, insects; even tadpoles, young frogs and lizards are occasionally found in their stomachs. The acorn is their most general favorite; but they prefer the pecan nut to any other food. A common mode of taking them is by means of pens, constructed of logs, and covered at the top, while a passage is made in the earth just large enough to admit an individual stooping: Indian corn is strewed some distance round to entice the flock, which, picking up the grain, is gradually led towards the passage, and thence into the enclosure, when they raise their heads and discover that they are prisoners: all their exertions to escape are directed upwards and against the sides, as they have not sagacity enough to stoop sufficiently low to escape by the way they entered. The male is nearly four feet in length. The prevailing color of the plumage copper or bronze-gold, changing into violet or purple. The ordinary weight is from fifteen to twenty pounds, but sometimes reaches thirty or even forty. The female is more plainly attired, and the medium weight about nine pounds. The turkey, in its wild state, appears to be almost entirely confined within the limits of the U. States; and well may we be proud of having produced this noble bird. It was first introduced into England in 1524, and is now domesticated in all parts of the globe. The flesh is almost unrivalled for delicacy of texture and agreeable flavor. A second smaller species has lately been discovered in Honduras, distinguished by the greater brilliancy of the plumage, and especially by ocellated spots on the tail. It has received the name of *M. ocellata.*

TURKEY. The extent and population of the Ottoman empire, previous to its recent losses, were estimated as follows: in Europe, 178,928 square miles (including Moldavia, Walachia, and Servia, 52,600 square miles, population, 1,790,000, which were only tributary provinces), population, 9,393,000; in Asia, 425,000 square miles, population, 10,290,000; in Africa (Egypt and Nubia), 300,000 square miles, with 3,114,000 inhabitants; in the whole 900,000 square miles, 22,800,000 inhabitants. Of these possessions, the African are not only lost, but the Egyptian sovereign has become the most formidable enemy of the grand seignior, and has actually conquered the four pachalics of Syria, having, in the campaign of 1832, successively reduced Acre, Damascus and Tripoli.* Greece has been severed from the Turkish dominions, and a boundary more favorable for the new kingdom than that established by the protocol of 1830, has recently been procured by the three powers from the Porte. This frontier line extends from the gulf of Volo to the gulf of Arta, and annexes Etolia, Acarnania, and part of Thessaly (about 3000 square miles) to the kingdom of Greece. The numbers of different races were, Tartars, 8,525,000; Arabians, 4,449,000; Hellenes (Greeks), 4,598,000; Sclavonians (Servians, Bulgarians, Bosniacs, Croats, &c.), 5,926,000; Armenians, 1,560,000; Walachians and Moldavians, 1,375,000; Syrians, 214,000; Arnaouts, 460,000; Jews, 620,000; Curds,

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* The Egyptian fleet which sailed towards the close of 1831, consisted of seven frigates, seven corvettes, and nineteen smaller vessels, besides transports, with a land force of 3000 infantry and 1200 artillery.

1,000,000; Gypsies, 80,000, &c. Of these, 13,552,000 were Mohammedans; 7,083,000 of the Greek church; 1,483,000 of the Armenian; 613,000 Catholics; 380,000 Monophysites; 300,000 Nestorians; 60,600 Druses, &c. The history of the state has been given in the article *Ottoman Empire*. Moldavia, Walachia, Servia, Egypt, Greece, Natolia, Syria, Bulgaria, Albania, &c., are described in separate articles.

Turkey in Europe is bounded by Russia, Transylvania, Hungary, Galicia, Illyria, Dalmatia, the Ionian republic, Greece, the Adriatic and Ionian seas, and the Archipelago. The command of the Black sea the Porte shares with Russia. The Bosphorus (q. v.), the sea of Marmora, and the Dardanelles, are open to all merchant ships of nations at peace with Turkey. The situation of the country, with its long extent of coast and its numerous bays, is favorable for commerce. It is protected on its frontiers by the valleys of the Save and Danube, and also by the Balkan (Hæmus), which extends from cape Emineh to the Illyrian mountains, and which is connected with the Rhodope, the Pangæus and other chains which intersect Greece. Separate from these lies Monte Santo, or Athos. (See *Athos*.)—*Turkey in Asia* is bounded by Persia, Russia, Arabia, and the isthmus of Suez, which connects it with Egypt, and the Mediterranean sea. From the mountains of Armenia flow the Euphrates (q. v.) and the Tigris (q. v.), which, uniting at Bassora, flow into the Persian gulf. In Anadoli or Natolia, there is a considerable river—the Kisil Irmac (Halys)—flowing into the Black sea, and in Palestine the Jordan. (q. v.) The latter falls into the Dead sea, a lake formed by volcanic eruptions, fifty miles in length, and from four to ten in breadth, whose waters are bituminous, saline, and sulphureous, and have no visible outlet. The principal mountains are the Taurus (q. v.), in Natolia; the Lebanon (q. v.), in Syria; the Antilibanus, &c. The most level province is Irak Arabi. In the south-east, immense deserts extend into the Arabian peninsula. The climate is temperate in the northern provinces, mild and refreshing in the central, and hot in the southern. The air of Mesopotamia is noxious, and there the debilitating samiel (see *Simoom*) blows over burning deserts, and the plague finds a home. Every region here yields its productions in abundance. The staple articles of export are wheat from Rum-Ili, rice from the countries on the south of Hæmus, cotton and tobacco from Macedonia, silk from Arnaout and Natolia, figs, saffron, gall-nuts and meerschaum from Natolia, mastich from Scio, wine from Cyprus, Angora hair from Natolia, naphtha from Mesopotamia, wool from Walachia, &c. In addition to these, opium, Lemnian earth, saltpetre, and marble, especially the Parian, are among the exports. Mining is totally neglected, and there is, in general, little manufacturing industry in the country; there are, however, some traces of skill in the preparation of saffron, the dyeing of yarn (especially in Thessaly), the manufacture of cotton cloths, carpets and works of steel (particularly excellent sword-blades). The Turks despise agriculture, and leave it to the conquered nations, whom they plunder when they find them to be wealthy and prosperous. It is only where the barbarians have no power, as in the country of the Druses, on mount Lebanon, or have not appeared, as upon some of the islands of the Archipelago, that successful industry is to be found. In Asia, agriculture is attended to only in the neighborhood of the cities: the wide plains on the banks of the rivers are covered with bands of wandering robbers. The people of this vast empire consist of a number of different nations, which mutually hate and despise each other, and are held together merely by fear and force. 1. The lords of the country are all Sunnites (q. v.), as the Arabs, Tartars and Turcomans, and particularly the Ottoman Turks, a people of great natural vigor, and inflamed with political and religious enthusiasm. They are most numerous in the northern provinces of Asia. They despise unbelievers, looking upon them as dogs and swine, and continue to act the part of the first savage conquerors. The character of this people shows extraordinary inconsistencies. They are, at the same time, according to circumstances, brave and cowardly, mild and savage, strong and weak, enterprising and sluggish, sensual and hardy. The great men at court, in the army, and in the provinces, are proud and cringing, suspicious and ungrateful. In general, the Turks are as ignorant as they are indifferent and insensible. They make no provision for posterity. No nation is more fully convinced than the Turks, that all upon earth is subject to change. 2. The Turcomans (see *Turcomania*), in Armenia, Natolia and on the rivers of the interior. 3. The Tartars, who have migrated from the Crimea to the provinces on the Danube. 4. Arabs. (q. v.)

5. Curds. (q. v.) 6. Greeks; among whom are the Suliots, in the ancient Epirus. 7. Armenians (see *Armenia*), scattered through the provinces as merchants and mechanics. 8. Sclavonians, in several tribes, as the Albanians or Arnaouts (q. v.); Bosniacs, in Bosnia, in part Mohammedans, part Catholic Christians; Servians or Rascians (see *Servia*); Bulgarians; Montenegrins. (q. v.) 10. Druses (q. v.), on the Lebanon. 11. Jews. 12. Walachians. 13. Gypsies, and several small tribes, of unknown origin, principally in the mountains in Asia. The written and court language is Arabic. (See *Turkish Language and Literature.*) In Constantinople, there are Greek, Armenian, Jewish and Turkish printing presses; but, in all the cities, a great number of scribes (kodjakians) are occupied in transcribing the almanacs, the Koran, &c. They form, in Constantinople, a powerful body. The ulema (q. v.), or body of lawyers, who belong to the religious order, is almost exclusively in possession of the learning. Ptolemy is still their guide in geography, and Aristotle in physics and natural history. A historiographer is appointed at the court of the sultan, and a court astrologer is consulted on matters of state. Painting and sculpture are neglected, because the Koran forbids the imitation of the human form. The music is noisy and without taste, but there are good female dancers.* The constitution rests upon seven collections of political laws (*Kanunname*), and is altogether Oriental. The padishah, as caliph, unites the highest spiritual dignity with the supreme secular power. He has unlimited control over the property and lives of his subjects, especially of the highest officers of state, whom he can remove or put to death at will. They kiss the bow-string which he sends them, and it is what they may all look forward to. The sultan makes laws without being himself subject to them. The Koran and the fear of public opinion, when it speaks by the voice of rebellion, alone restrain his will. All his subjects are equal in his eyes, for they are all slaves. A French historian calls the Turkish government *un despotisme absolu, tempéré par le regicide.* The people have no rights. Merit, or favor, or intrigue, can raise the lowest to the highest stations. There is no hereditary nobility. The succession to the throne is hereditary in the family of Osman; the will of the people and of the janizaries has often decided upon the individual. On the extinction of the male posterity of Osman, the right to the throne passes into the family of the former Tartar khan. Women are excluded from the succession. The padishah is not crowned; he is merely girded with the sword of Osman, after he has sworn to uphold the religion of Mohammed. The women of his harem are, for the most part, Circassians or Georgians: a free-born woman cannot enter the harem as an odalic. Since Ibrahim, the sultans have been accustomed to choose from among them seven wives (cadin). She who first bears a son is called *chakessi sultana;* the other mothers of the princes have the name of *sultana chassecki*. The mother of the reigning sultan, or the *sultana valide*, enjoys great privileges. She is not confined in the apartments of the Eski seraglio, and has a yearly pension of 500,000 piasters. (See *Harem*, and *Sultan.*) The princes are usually brought up in confinement, among the eunuchs and odalics. Each learns a mechanic art or handicraft, but they never acquire the knowledge which would fit them to rule. They have no prospect but the throne or death in prison. The daughters of the sultan have the title of *sultana*, and, while yet in the cradle, are married to viziers, pachas, and other great officers; but their male posterity, by a law of the empire, are condemned to death from their birth. The court establishment, with all the eunuchs, women, guards, &c., includes 10,000 persons. The external court consists of the attendants of the grand master of the seraglio, seven chamberlains, the court officers, a body-guard of 2000 men, (the bostangi was dissolved in 1826), the confidants or titular dignitaries, to which class belong the mutes, the dwarfs, the musicians, the masters of audience, the masters of the stirrup, and the viziers of the shoulder. (See *Seraglio.*) The inner court establishment consists of the harem, with its women, white and black eunuchs (whose chiefs, the kislar and capi aga, possess great influence), the grand vizier, and the sublime porte, which form the two cabinets of the kiaga beg, or minister of the interior, and of the reis effendi, or minister of foreign affairs. The title

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* The present sultan has not only endeavored to introduce European customs and tactics, but has appointed a librarian to the library of the Hamadirge mosque, in Medina, with orders for the preparation of a catalogue, and the adoption of measures for the preservation and increase of the library. A newspaper is now likewise printed at Constantinople, in French and Turkish (*Moniteur Ottoman*), and another in Crete, in Turkish and Greek.

of the present padishah is—"Sultan, son of a sultan, chakan, son of a chakan, sultan Mahmoud II, khan, son of the victorious Abd-ul-Hamid, by the infinite grace of the Creator of the world and the eternal Being, and through the mediation and great miracles of Mohammed Mustapha, the greatest of prophets, upon whom rest the blessing of God, servant and master of the cities of Mecca, Medina, and Kods (Jerusalem), towards which all men turn their faces when they pray, padishah of the three great cities of Istambul, Edreneh (Adrianople), and Bursa, which all princes regard with envy," &c. The arms assumed by Mahmoud II, after the conquest of Constantinople, are a silver crescent in a green shield. Selim III, in 1799, after Nelson's victory of the Nile, founded the order of the crescent, in three classes, for Franks, which has been conferred on Nelson, Sebastiani, and other foreigners. The administration of government is also Oriental. The grand vizier rules in the name of the sultan, or, in his absence, the caimachan. The intrigues of the women and the eunuchs in the seraglio have also much influence. The supreme council of state, the divan, is held in the second hall of the seraglio, under the presidency of the grand vizier. The ordinary divan consists of the highest officers of the empire (the kiaga beg, the reis effendi, the defterdar, or minister of finances, the capudan pacha, or high admiral, the tchausch-baschi, or minister of the executive), and the agas of the troops: to the extraordinary divan, several other persons are called, particularly the mufti. The provinces, with the exception of Moldavia, Walachia and Servia, and the two cities of Istambul (Constantinople), and Edreneh (Adrianople), are divided into twenty-five ejalets, pachalics or governments, with two hundred and ninety sangiacs or banners; the pachas of Rum-Ili, Anadoli (Natolia), and Damascus, bear the title of beglerbeg, and have three horse-tails carried before them. The capudan pacha, or high admiral, enjoys the same honor: the other pachas have but two tails. The pachas in the provinces have their divans similar to the sultan's. In other respects, unless the powerful ulema opposes them, their authority is without control, and their only duty is to pay the contributions to the grand seignior. Yet they are sometimes removed from their places, when the people are driven to rebellion by oppression, or when the ulema is hostile to them; sometimes, also, to punish their pride, or from suspicion, or to confiscate their property. In June, 1827, the pachas in the provinces lost their right of civil administration, and civil governors were sent to supersede them. In military matters, every pachalic is divided into sangiacs. The pachalics are likewise divided into moslemlics, woiwodolics, and agalics. In some countries there are moslemlics and agalics, entirely independent of the pacha, the rulers of which, with the exception of administering justice, exercise all the rights of sovereigns: some of these places are given for perpetuity to certain families. The source of all civil, political and criminal law is the Koran. In addition to the code of laws (*Moulteca*), the interpretations of the ulema have great weight in the tribunals. The mufti is not only the chief of the priests, but the highest interpreter of the laws. His decisions (fetvas) are collected. The highest tribunal, the divan chaneb, is held four times a week by the grand vizier in his palace, or, in his absence, by the tchaush-baschi. In the lower tribunals of the large cities, the mollas sit, in those of small towns, the cadis. The moslems are, under them, the executors of the sentences. The administration of justice is as simple as it is prompt and energetic. The common punishments are the bastinado, hanging, drowning, strangling, and impaling. Bearing false witness is the greatest crime. At the head of the church stands the sultan, as caliph, and, in his name, the mufti, who is appointed and deposed by the grand seignior. In the larger cities, the mufti appoints under muftis. After him, the cadileskis, mollas, and cadis, are the most important members of the ulema. The priests are divided into secular and monastic. The former (the imans, danishmends, and talismans) perform the public religious ceremonies in the mosques, dshamis (temples built by the grand seignior in the capital cities), and medsheds. (See *Mosques*.) The latter, the dervises, form about thirty different orders or brotherhoods. All other religious sects, though despised and insulted, are allowed the free exercise of their religion in their temples, and under their patriarchs, archbishops, and bishops. The revenues of the state flow into the miri or public treasury, and amount to about eighty-four purses, or 20,000,000 dollars. They are drawn from the karadsch (a poll-tax upon unbelievers, and a tax upon their real estate), from the tithes which the moslems pay for the support of the church, from the taxes upon property, the customs, monopolies, mines, the mint, taxes in the provinces, and the tribute of the hospodars of Moldavia, Walachia and Servia. The miri has a debt of about seventy million florins. Distinct from this is the itsch hazne, or treasury of the sultan, which is filled by the rents of estates, by presents and extortions, and by the confiscated property of the great officers. The land forces were, until recently, organized on a miserable Asiatic system, and amounted, according to Marsigli, to 220,000 men; of whom 74,000 were mercenaries, 59,000 infantry (see *Janizaries*), toptshis, or artillery, and others, and 15,000 cavalry. (See *Sipahis*.) There were, besides, in time of war, the bands of feudal vassals, amounting to 126,000 men, the contingent of the Tartars, 12,000, and that of the Moldavians and Walachians, 8000. The grand vizier is commander-in-chief; the separate corps are commanded by agas, the provincial troops by pachas and sangiacs. The present sultan, with more success than Selim III, has begun, since 1814, to form an army on the European plan, and, in the year 1826, dissolved the body of janizaries throughout the kingdom. Selim III formed a mathematical school for the officers of the navy, which consists of ten ships of the line, twenty frigates, and thirty smaller ships, commanded by the capudan pacha. Tunis and Tripoli are still nominally dependent on Turkey. Algiers is now in the hands of the French. See Von Hammer's *Constitution and Administration of the Ottoman Empire* (in German, 2 vols., Vienna, 1815), and his *History of the Ottoman Empire*, drawn from original sources (in German, 7th vol., Pest, 1831); Palla's *Histoire abrégée de l'Empire Ottoman* (Paris, 1825). Marsigli has given an account of the military, and Mouradgea d'Ohsson of the ecclesiastical establishment. Of the *Tableau générale de l'Empire Ottoman, par M. d'Ohsson*, the first four parts appeared in five volumes (Paris, 1788 and 1790); the fifth, sixth and seventh parts complete the work (Paris, 1824). The writings of Tott, lady Montague, Olivier, Eton, and Thornton, together with the accounts of later travellers, Clarke, Von Hammer (Constantinople and the Bosphorus), Forbin, Choiseul-Gouffier, Pouqueville, J. Carne (Letters from the East, London, 1826, 3 vols.), and others, serve to give a correct idea of this empire, composed of various nations and countries, the fragments and ruins of the ancient world.

Turkish Language and Literature. The Turks are of Tartar origin, and their language is a Tartar dialect. It is entirely different from the Arabic, as well as the Persian, and from the languages related to these. The Turkish language is sonorous, but, at the same time, rough and harsh. The Eastern nations have various sayings to indicate the character of the principal languages of Western Asia, the Arabic, Persian and Turkish; for instance, the Arabic language, they say, persuades; the Persian flatters; the Turkish reproves; the Serpent employed Arabic in paradise to seduce our general mother; Adam and Eve discoursed of love in Persian; the angel spoke Turkish when he was compelled to drive our first parents from paradise. The Turkish language is very regular in its grammatical construction, but, in itself, is poor in words. The Turks, therefore, to supply its deficiencies, have adopted all the stores of the Arabic and Persian; and these have become so united with it, that a good knowledge of Turkish cannot be acquired without a knowledge of Arabic and Persian. By the mixture of three so completely dissimilar languages, the learning of Turkish becomes very difficult; for words and phrases from all are intermingled, without any change, as well in common life as in writing. The Turks use the Arabic characters, with some small alterations, and write, after the manner of the Jews and Arabians, from right to left. Their paper they receive principally from Venice, but polish it highly before using it. Their pens are made of fine reeds, and their ink is like our printer's ink. They write upon their knees, or, at the most, use a piece of pasteboard for a support. The vowels, which consist of little straight or crooked strokes, and are placed, some above, some below, the consonants, are, excepting in the Koran, seldom written. The difficulty of reading is increased by the many dissimilar alphabets and characters which are employed in writing: one alphabet is used in the official papers of the government, another in letters, another in the courts, another in literary productions, another in accounts, &c. A person who can read one of them easily, may not be able to read a word of another. Like the French in Europe, the Turkish is, in a great part of Asia, and on the northern coast of Africa, the common medium of communication between nations speaking different languages. After the Turks had received a written character with the Koran of Mohammed, and, at the commencement of the fourteenth century, under one of their emirs, Osman, had founded an independent empire upon the ruins of the Greek, they began gradually to feel the necessity of more literary cultivation. Even sultan Orkan, the successor of Osman, although devoted to war and conquest, founded, in 1336, at Brussa, in Natolia, a literary institution, which became so celebrated for the learning of the teachers, that even Arabs and Persians were not ashamed to become scholars of the Turks. Their own historians remark that the monarchs of this house, until the time of Achmet I (1603), although not all equally distinguished by glorious undertakings and princely virtues, yet all gave lustre to their reigns, by their love and encouragement of learning. The golden age of Turkish literature was in the second half of the fifteenth century, during the government of Soliman, who was called the *lawgiver*, the great-grandson of Mohammed II, whose victories put an end to the Roman empire. In the Turkish schools and higher literary establishments which are usually connected with the mosques, and whose number amounts in Constantinople to several hundreds, the principal branches taught are the Arabic, grammar, logic, rhetoric, dialectics, according to manuals which were written by the Arabians in the middle ages. In general, the Arabs of what we call the middle ages, continue to be the teachers of the Turks in philosophy, mathematics, physics, medicine, law, and theology. Treatises on astrology, the interpretation of dreams, and all the modes of predicting future events, form no inconsiderable part of Turkish literature, and are continually studied. Astrology, in particular, holds the rank of a science among the Turks, and has also an important influence upon all affairs of state and private concerns. The munedschim baschi (superior or court astrologer) is one of the most important court officers, since the time of the most important transactions is determined by him. The calendar is likewise prepared under his superintendence. But the instruments essential to investigations in natural science are, in Turkey, either entirely unknown, or used only in childish jugglery, to excite the astonishment of the ignorant. The telescope, the magnifying glass, the electrical machine, and all similar aids to the study of nature, the Turks do not know how to use to advantage. They do not even generally employ the compass in their sea voyages. Hence navigation, astronomy, geography, agriculture, chemistry, and other sciences which have received an entirely new form by the discoveries of the moderns, must be in a very low state among the Turks. They are fond of history, but their historical works are written, for the most part, either in a dry chronological method, or in a bombastic style, half poetry, half prose, and overloaded with figures. One of their oldest and most esteemed annalists is Saad-ed-din, who, after having been the instructer and tutor of two sultans, died in the office of mufti at Constantinople, in 1599. His chronicle is entitled *Tadsch-et-tawarich* (that is, the Crown of Annals), and extends from the origin of the Turks to the death of Selim I, in 1520, and is regarded by the Turks as a classical work. It has been translated by Leunclavius into Latin, by Bratutti into Italian, and by Podesta into German and Latin. In the works of Naima, Raschid and Tchelebisade, the annals of the Turkish empire, from 1592 to 1727, are continued in unbroken succession. Hadschi Chalfa, surnamed Tchelebisade, who died at Constantinople, 1657, was distinguished for his historical and literary attainments. Under the title of *Open Books*, and *Knowledge of Science*, he composed a work of a cyclopædic and bibliographical character, in which the names of all the branches of science cultivated by the Arabians, Persians and Turks, are given, and the titles of all the works written in these three languages, from the 1st to the 1050th year of the Hegira (A. D. 1640). This work served as the foundation of the Encyclopædic View of Oriental Science (by Joseph von Hammer, Leipsic, 1804), to which is prefixed an autobiography of Hadschi Chalfa. Besides this biographical work, and several other writings of Hadschi Chalfa, his chronological tables, beginning with Adam, and continuing to 1640, deserve to be particularly mentioned. The Latin translation of these, by Reiske, is still to be found in manuscript in the royal library at Copenhagen. In poetry, also, the Arabians and Persians are their models. Their poems are chiefly of a mystical or moral cast, or devoted to love. We need only mention the romantic poem of the Turk Molla Khosrew, *Chosroes and Shereen*. Some Turkish eclogues are contained in Hammer's *Morgenländisches Kleeblatt* (Eastern Trefoil, Vienna, 1819). Riddles, logogryphs, chronograms, and similar poetical trifles, are very popular among them. All their poetical productions are in rhyme. Their prosody and the technical part of their poetry are the same as those of the Arabians and Persians. *Mosnevi* is a long poem, in which each distich has its peculiar rhyme; *gazelles* and *cassides* are odes or songs with a single rhyme; the *rubaji* (tetrastichon) is mostly epigrammatic; the *kitaa* has 4—8 strophes with various rhymes, and is applicable to all subjects. Accounts of Turkish poets, and specimens of their poetry, are contained in *Latifi*, or Biographical Sketches of eminent Turkish Poets, together with an Anthology drawn from their works; translated from the Turkish of Monka Abdul Latifi and Aschik Hassan Tschelebi, by Thomas Chabert (Zürich, 1808). The *Divan* of Baki, the principal lyric poet of Turkey, who died in 1600, has been translated into German, entire, by Joseph von Hammer (Vienna, 1825). In 1727, during the reign of Achmet III, Ibrahim, a renegade, a native of Buda, with the assistance of a Jew of Prague, Chacham Jonas, and under the patronage of the grand vizier, Ibrahim Pacha, established a Turkish printing press at Constantinople, at which, in 1742, seventeen works, comprising twenty-three volumes, and 13,000 copies, had been printed. After a long interval of inaction, the press was again used, in 1783, during the reign of the sultan Abdolhamid. But its activity continued only about two years. In 1793, it was again brought into action by Abdorrhaman Effendi, a Turkish mathematician, who had rendered valuable services to the Porte, as commissioner for settling boundaries after the peace of Sistow. Abdorrhaman connected it with a school for teaching engineering at Chasskoi, a suburb of Constantinople. . It remained there some years, and, at the beginning of the present century, was removed to the barracks of the new militia at Scutari. In 1806, twenty-six works had issued from this press. In the disturbances of 1807 and 1809, it suffered great damage, but was restored by the present sultan, Mahmoud II, in 1809. A complete catalogue of the books printed at Constantinople, down to 1813, has been given by Hammer, in the Leipsic Literary Journal, 1813, No. 42, 1814, No. 197 and 198, and 1820, page 307, and in Hormayr's Archives. See, also, Toderini's *Turkish Literature* (3 vols.); and Ludecke's *Account of the Turkish Empire* (3 parts). All books relating to theology and law were excluded from the press. The press at Constantinople has since produced the *Kamus* (3 vols., fol.); the *Mewahib*, a metaphysical work, and, in 1824, the Arabian commentary of the *Scheichsade* (written under Mohammed IV), on the Arabic *Moulteka*, the famous Mohammedan religious code, composed by the sheik Ibrahim von Haleb, under Solyman the Great. The imperial historiographer, Jerome Megiser, published, at Vienna, the first Turkish grammar, in 1612. Afterwards the study of the Turkish language was much attended to, particularly at Vienna, as the intercourse between Austria and the Porte had become very considerable. Francis von Mesgnier Meninski, court interpreter, published the best Turkish grammar (Vienna, 1680), in Latin, folio, and likewise the best dictionary of the Turkish language. The first, with the addition of exercises in analysis and reading, was republished by Kollar (Vienna, 1756, 4to.): the last, likewise, much enlarged, by Jenisch, was republished at the expense of the emperor (Vienna, 1780—1803). There are Turkish grammars in the French language, in which the Turkish words are printed in Roman letters, by Preindl (Berlin, 1789, with a dictionary), and by Viguier (Constantinople, 1790—1794). The last grammar of the Turkish language was published by Jaubert (Paris, 1823). Many scholars, of much learning in Turkish literature have been formed at the Oriental academy in Vienna, established by the empress Maria Theresa, in 1753, for the education of young diplomatists to conduct the intercourse with the Porte; particularly Von Jenisch, Von Sturmer, Von Chabert and Von Hammer. The last has given a view of Turkish literature, in the appendix to the *Codices Arabici, Persici, Turcici Bibl. Vindob. recens.* (Vienna, 1820). Toderini, in his work upon Turkish literature, written in Italian (Venice, 1787, 3 vols.), Mouradgea d'Ohsson, Joseph Christ. Clodius, Goldermann, Von Diez and Von Hammer have also done much to furnish information concerning the Turkish language and literature.

Turkish Music. The Turks received their music from the Persians. It is rude, but much employed by them, especially in the expression of love or warlike excitement. But public exhibitions of musical skill for money they consider as disgraceful. The chief instruments in their warlike music are hautboys, trumpets of a piercing sound, cymbals, small drums of various kinds, and the bass drum; but small flutes, triangles and bells, such as the Europeans use in what they call

Moorish or *Turkish music*, are rarely united with those above mentioned. Their martial music is monotonous, and has principally the character of a rhythmical noise, which inspires the warrior with fire and fury. In general, their music is deficient in harmony, and most of their pieces are not played from notes: they have, however, the same tones as we have, but they use the half tones much more. Their soft music has something melancholy and touching: the instruments which they use for it are a violin with three strings, the *viole d'amour*, borrowed from foreigners, the dervise flute, the tambour, a kind of lute (*mander*), the shalm, and the drum with bells. Turkish music has been much used in operas and concerts of late; but it confuses and deafens rather than delights the cultivated ear.

Turkmans. (See *Turkestan.*)

Turk's Islands; a cluster of small islands among the Bahamas, the largest of which is situated in lat. 21° 20′ N., lon. 71° W. They belong to the British, and there is a port of entry established on the largest, Grand Key: there is here an anchorage, but no harbor. The number of inhabitants is small and fluctuating; many of them merely spending part of the year there for the purpose of salt-making. Salt, which is procured from salt ponds, is the only article of export.

Turmaline. (See *Tourmaline.*)

Turmeric (*terra menta*); the root of the *curcuma longa*. It is brought from the East Indies, and is very rich in a yellow color, which has great brightness, but little durability. Common salt and sal-ammoniac are the mordants best adapted to fix it. The root must be reduced to powder to be fit for use. It is sometimes employed to give the yellow made with weld a gold cast, and an orange tinge to scarlet; but the shade which the turmeric imparts soon disappears in the air. It has an aromatic smell, somewhat resembling that of ginger, and is much cultivated in the East Indies, where it is in common use as a seasoning for ragouts and other dishes. It constitutes a principal ingredient in curry powder, and in this form is used in great quantities both in India and Europe.

Turnament. (See *Tournament.*)

Turner, Sharon, an English solicitor, is the author of several valuable works on the history of England, which are distinguished for accuracy and extent of research. They form together (History of England from the earliest Period to the Death of Elizabeth) twelve volumes, octavo, but consist of the following separate parts: History of the Anglo-Saxons (5th edit., 3 vols., 8vo.), England during the Middle Ages (5 vols., 8vo., 3d ed.); Reign of Henry VIII (2 vols., 8vo., 3d ed.), being the first part of the modern history; Reigns of Edward VI, Mary, and Elizabeth (2d part of modern history, 2 vols., 8vo.), and contain much new and interesting matter on the government, laws, literature and manners, as well as on the civil and ecclesiastical history of the country. His other works are Vindication of the ancient British Poems of Aneurin, Taliesin, &c. (8vo., 1803), and Sacred History of the World to the Deluge (1832).

Turnerite; a rare mineral found in small crystals, having an oblique rhombic prism of 96° 10′ for their primary form. Color, yellowish-brown; shining; translucent; scratches fluor, but yields to the knife, affording a grayish-white powder. It contains alumine, lime, magnesia, and very little iron. Its only locality is mount Sorel, in Dauphiné, where it occurs accompanied by quartz, feldspar and anatase.

Turning, in mechanics; a very ingenious and useful art, by which a great variety of articles are manufactured, by cutting or fashioning them while they revolve upon an axis or line, which in most cases remains immovable. Every solid substance in nature may be submitted to this process; and, accordingly, we have articles turned in the metals, in wood, in pottery, in stone, in ivory, &c., so numerous, and so universally in use, that it would be superfluous to point them out. The simplest process of turning is that of the potter, who, in the first stage of forming his ware, sticks a piece of wet clay upon a wheel, or flat table, while it revolves horizontally, and, in this state of rotation of the clay, fashions it, with the greatest facility, into vessels of every description. But in most operations of the art, the revolving body is cut or shaved by applying a chisel, or other suitable tool, to its surface, while in motion; a condition that requires firmness in the axis of rotation, and also that the tool itself should be steadily supported. The instrument or apparatus for these purposes is called a *lathe*. Among the great varieties of lathes, it is indispensably required, for circular turning, that the work should be supported by two steady centres, or by parts equivalent to two centres, at a distance from each other in the axis of rotation, and that the tool should be supported by a steady bar, or a piece called the *rest.* A great number of turned articles either have, or will admit of a perforation through their axis. All wheel-work, and most of the articles turned in wood, are of this description. Clock and watch-makers accordingly use a very cheap, simple and portable lathe, called a *turn-bench*, consisting of a straight bar of iron, about five inches long, with two cross bars or heads, about two inches long, one fixed at the end of the long bar, and the other capable of being shifted by means of a socket and screw. In each of these heads is a centre-pin, terminating in a point at one end, and in a central hole at the other, like the centre-pin in the poppet-head of any other lathe; the use of which is to afford point-centres when the points are turned towards each other, or hole-centres when the contrary is the case; and lastly, there is a small rest, with its support, slidable and adjustable along the bar, as in another lathe. These instruments will therefore support any piece of four or five inches long, and three inches diameter, between the centres; and the method of producing the rotation is by passing the catgut string of a bow once or twice round the work, and drawing the bow backwards and forwards with one hand, while the other is employed in applying the tool. The turn-bench itself is held steady in a vice fixed to a bench or stand. The common lathe of the turners in wood, called the *pole-lathe*, is the same thing as the watchmaker's turn-bench, but upon a large scale, and a little varied. Instead of the horizontal bar, it has two long stout bars of wood, called *shears*, forming what is called the *bed* of the lathe, and its two poppet-heads are upright blocks of wood, mortised in between the shears, above which they rise and carry the centre-screws, and between which they are movable, and may be wedged firmly at any required distance from each other. The work itself is either put between the centres, or upon a wooden mandrel, and is made to revolve by a string or band, proceeding from a long spinning pole at the ceiling or roof of the shop, round the work, and thence to a treadle or foot-board, which acts by alternate pressure from the foot, while the workman applies the cutting tool with his hands. In these, and all similar lathes, the rotation is made backwards and forwards; and there are some kinds of work in which such a motion is advantageous; but in general it is much preferable that the work should constantly revolve the same way as in the lathe usually known by the name of the *foot-lathe.* The stronger, the firmer, and the better the workmanship of a lathe, the easier it will be to perform work with expedition and truth; but a good workman will make true and excellent work with a very indifferent lathe, by taking care to cut so little at a time, that the parts of the engine may never be shaken out of their contact. Metallic lathes, if ever so strong, have an elastic tremor, which makes it difficult to cut brass and bell-metal as firmly and smoothly as in wooden lathes; but the structure of the former admits of greater precision and truth. The velocity of rotation may be extremely swift in wood, slower in brass and bell-metal, still slower in cast-iron, and slowest of all in forged iron or steel. The reason for these limits appears to be, that a certain time is requisite for the act of cutting to take place, and that the tool itself, if heated by rotation, will instantly become soft, and cease to cut. Steel and iron require to be kept wetted. Hitherto we have spoken of plain turning, which is indeed the most useful and most universally practised. But many other nice and very curious operations are performed by this art. If the poppet-heads, supporting the mandrel, be made regularly to move from side to side, during the rotation, or the rest be made to approach to, and recede from, the work, any number of times in a turn, the cuts will not be circular, but undulating, indented or waved in any curve that may be required. Work of this kind, which is chiefly done on watch-cases, snuff-boxes and trinkets, is called *rose-work.* The motion is commonly regulated by certain round plates of brass fixed on the mandrel, called *roves*, which have their edges waved, and are called *roses.* The act of turning is so extensively applicable, that it would require a volume to describe its uses, and the methods of practising it. The largest columns, the most ponderous artillery, and the minutest pivots of watch-work, with all wheel-work, rotatory machines, vessels, &c., are worked in this method.

TURNIP. (See *Appendix*, end of this vol.)

TURNPIKE; a gate set up across a road, watched by an officer for the purpose, in order to stop travellers, wagons, coaches, &c., to take toll of them. In the U. States, turnpike roads are often called *turnpikes*, just as mail-coach, hackney-coach, stage-coach, are shortened to *mail*, *hack* and *stage.*

TURNSPIT. (See *Appendix* to this vol.)

TURPENTINE is a resinous juice extracted from several trees belonging to the genus *pinus*. The common American turpentine comes from the *pinus palustris*, which grows abundantly in the Southern States. English turpentine is from the Scotch fir (*P. sylvestris*). Venice turpentine, which is more thin and aromatic, is from the *pinus larix*. Strasburgh turpentine is from the *pinus picea*. All these kinds of turpentine, and many others, known in commerce, are obtained by exudation and hardening of the juice flowing from incisions into the pine trees. To obtain the oil of turpentine, the juice is distilled in an apparatus like the common still; water is placed with the turpentine, and the residuum and product exceed the original weight: 250 pounds of good turpentine produce 60 pounds of the oil. Sixteen ounces of Venice turpentine, being distilled with water, yielded four ounces three drams of oil of turpentine; and the same quantity distilled without water, yielded, with the heat of a water bath, two ounces only. When turpentine is distilled, or boiled with water till it becomes solid, it appears yellowish; when the process is farther continued, it acquires a reddish-brown color. The oil of turpentine, called also *spirit of turpentine*, cannot without singular difficulty be dissolved in alcohol, though turpentine itself is easily soluble in that spirit. One part of the oil may be dissolved in seven parts of alcohol; but on standing, the oil chiefly separates, and falls to the bottom.

Turpin, archbishop of Rheims, to which see he was probably raised about 753, died at the beginning of the ninth century. He encouraged literature by procuring books to be copied, and enriched the library of his church, for which he procured from Charlemagne many privileges. His name has escaped oblivion in consequence of its having been prefixed to the romantic history of Charlemagne and Roland, one of the grand sources of the tales of chivalry of the middle ages. (See *Romance*.) From internal evidence it appears that this mass of fable was compiled in the eleventh century, and was translated from Latin into French in 1206 and 1207, by a clerk dependent on Renaud, count of Boulogne. A more recent version was published by Robert Gaguin, in the beginning of the sixteenth century. The original first appeared in the historical collection of Schardius, Frankfort on the Maine (1566, folio); and Ciampi printed (Florence, 1822, 8vo.) an edition of the work, with a preliminary dissertation.

Turquoise, or **Calaite**, is a mineral found only massive, having an impalpable composition and a conchoidal fracture; color blue, or green, often bright; feebly translucent on the edges, or opaque; hardness that of feldspar; specific gravity 2.83 to 3.00. It is not dissolved by muriatic acid. Before the blow-pipe, it becomes brown in the reducing flame, and gives a green color to it. It is infusible by itself, but very easily so with borax or salt of phosphorus. According to Berzelius, it consists of phosphate of alumine and lime, silex, oxide of iron and copper, and a little water. It is found in Persia, either in pebbles, or in small veins, in its original repository, traversing a kind of trap. Cut and polished, it is used for ornamental purposes. It is commonly cut *in oval*. A piece of fine color, five lines by four and a half, is valued at about forty-five dollars.

Turtle. (See *Tortoise*.)

Turtle Dove. (See *Appendix*.)

Tuscaloosa, the metropolis of the state of Alabama, is situated at the falls on the Black Warrior, near the centre of the state, 320 miles above Mobile, 160 south-west of Huntsville. The name of this town is the Choctaw word for *Black Warrior*. The first settlement was made here in 1816—17. In 1821, it contained about 700 inhabitants, and in 1830, 1600. It is the capital of Tuscaloosa county, and contains the state and county buildings, and the usual variety of dwelling-houses, shops and offices, that are found in the new and flourishing towns of the south and west. The temporary log buildings first erected here have not wholly disappeared. Tuscaloosa is 858 miles from the city of Washington, and stands in lat. 33° 12′ N., lon. 87° 42′ W.

Tuscan Order of Architecture. (See *Architecture*, vol. i, page 341.)

Tuscany (*Toscana*); a grand duchy of Central Italy, bounded north by Modena and the States of the Church, east by the States of the Church, and south-west by a part of the Mediterranean called the Tuscan or Tyrrhenean sea. It includes Elba and some smaller islands; is divided into three provinces, Florence, Pisa and Sienna; chief towns, Florence (q. v.), the capital, Leghorn (q. v.), the chief seaport, Sienna, Pisa, Arezzo, Cortona, and Piombino; square miles, 8390; population, 1,300,530. The face of the country is agreeably diversified with hills, valleys and plains. The Apennines, entering on the north, traverse the country in a south-east direction. In Tuscany, their highest summits do not exceed 3000 feet, sometimes bleak and sterile, but generally covered to the tops with vegetation and forests. The country is well watered by numerous streams: the most considerable are the Arno, Cambrone and Chiana. The climate is generally pleasant and healthy, except the Maremma, or maritime district. The soil, for the most part, is a rich alluvial mould. The chief objects of culture are wheat, maize, beans, peas and a variety of vegetables; also clover and other artificial grasses; vines, mulberries, olives, oranges, lemons, figs; and rice in the marshy parts. Sheep and cattle are numerous in the mountainous districts. Near Pisa is a stud of camels, established at the time of the crusades. There are mines of copper, lead and quicksilver; also marble, alabaster, crystal and rock salt. There are scarcely any large farms, but the land is divided into petty lots, and the culture takes place more commonly by the spade than the plough. Tuscany is no longer conspicuous for its manufactures: the most important article is silk. The commerce is considerable, and carried on chiefly through the port of Leghorn. The Tuscans are well formed, with a pleasing countenance, and, among all the people of Italy, are most fond of the arts and sciences: polite and kind in their manners, they are at the same time industrious and gay. The language of the Tuscans is considered the purest and finest dialect of Italy (see *Italian Language and Literature*); and in the history of letters and art, the names of Dante, Petrarca, Boccaccio, Galilei, Machiavelli, Giotto, Cimabue, Leonardo da Vinci, Michael Angelo, the Medici, &c., appear among the natives of Tuscany. 'There are universities at Florence (200 students), Pisa (450), Sienna (250). There is an observatory at Pisa; and the Florentine academy, and the academy of fine arts at Florence. Little has been done towards popular education; and, in 1818, there were 750,000 individuals, or about three quarters of the population of the best educated part of Italy, unable to read or write. The ancient names of this country were Tyrrhenia and Etruria. (See the articles.) After the fall of the Western Empire (476), it passed successively into the hands of the Ostrogoths (see *Goths*), Byzantine Greeks, and Lombards (q. v.), under whom Hetruscia formed a duchy. The name of *Toscana* dates from this period. Charlemagne made it a Frankish province; and it was governed by marquises or dukes, who, in course of time, rendered themselves independent. In 1160, the emperor Frederic I purchased it of the Guelfs; but the towns endeavored to render themselves independent. Florence leagued herself with several cities against the empire, while Pisa, at the head of others, adhered to the emperors. For 300 years Tuscany was desolated by the contests of the Guelfs and Gibelines. (See *Guelfs*, and *Italy*.) In the middle of the thirteenth century, Sienna was a flourishing republic. The country was next distracted by the disputes between the nobles and the citizens, and, in 1343, the former were excluded from all share in the government in Florence. Next came the quarrels between the rich and the poor. The family of Medici finally acquired the favor of the poorer classes, and the sovereignty over Tuscany (1434—1737). During this period Pisa (1509) and Sienna (1557) were conquered by Florence. Tuscany became the seat of refinement and the arts under the patronage of the Medici. (q. v.) In 1569, Cosmo de' Medici had assumed the title of grand duke, and, in 1737, the grand duchy of Tuscany, on the failure of the Medici line, passed to Francis, duke of Lorraine, and, on his ascending the German throne (see *Francis I*), to the house of Austria. Napoleon formed the kingdom of Etruria of the Tuscan state (see *Etruria*, and *Lucca*); but, in 1814, the archduke Ferdinand III again took possession of it. The congress of Vienna then incorporated the *Stato degli presidj*, the principality of Piombino, with Elba and the *enclaves*, with the grand duchy. After the death of the archduchess Maria Louisa, Lucca will also be attached to Tuscany. The present grand duke, Leopold II (born 1797), nephew of the emperor of Austria, succeeded his father in 1824. The revenues of the state amount to about two and a quarter million dollars; the debt is nearly four millions. The grand duke is an absolute sovereign.—See Pignotti's *History of Tuscany, with an Account of the Revival of Letters, Science and Art*, from the Italian, by Browning (4 vols., 8vo., London, 1826).

Tusculanum; a celebrated villa of Cicero's near Tusculum. It was the favorite residence of the great orator, who not only adorned it more highly than any of his other villas or estates, but also gave instructions here in philosophy, and conversed with his friends and disciples on those subjects which are treated of in his Tusculan Questions. Tusculum (now *Frascati*), one of the chief cities of ancient Latium, lay to the north of Rome, in a delightful region, which was so filled with gardens and villas, that the whole distance from Rome to Tusculum seemed one great pleasure ground. According to fable, Tusculum was built by the son of Ulysses and Circe. Upon the classic soil of the ancient Tusculum lies Ruffinella, an estate bought by the late king of Sardinia of Lucien Bonaparte. (See *Frascati*, and *Lucien Bonaparte*.)

Tutenag. This name is given in India to the metal zinc. It is also sometimes applied to a white metallic compound brought from China (called likewise *Chinese copper*), the art of making which is unknown in Europe. It is very tough, strong, malleable, and may be easily cast, hammered and polished. The better kinds of it, when well manufactured, are very white, and not more disposed to tarnish than silver. Three ingredients of this alloy have been discovered by analysis to be copper, zinc and iron.

Tutti (Italian plural, *all*); a word used in contradistinction to *solo*, to point out where the whole band, or all the instruments of the kind required, are introduced.

Tweed, a river of Scotland, which rises in the south part of Peeblesshire, passes by or near to Peebles, Melrose, Kelso, Coldstream, from near which place it forms the boundary line between England and Scotland, and runs into the German sea, at Berwick.

Twelve Tables, Laws of the. In the year 454 B. C., the Romans determined, at the suggestion of the tribunes, that a new code of laws should be prepared. An embassy was therefore sent to Greece, say the Roman historians, to examine the laws of that country. Meanwhile the consulship and tribuneship were both suspended, and a legislative body of ten patricians (*decemviri*), clothed with dictatorial powers was created, B. C. 451, A. U. 303. They collected the laws and customs, which were thenceforward to be of general application in place of the former partial and local laws, and thus laid the foundation of a system of common and equal law. This code was engraved upon ten oak tablets, to which two others were added in 450; hence the name *Leges Duodecim Tabularum* (Laws of the Twelve Tables). (See *Civil Law*, and *Appius Claudius*.) This account is found in Livy, Dionysius of Halicarnassus, &c. See Dirksen's *Review of the Attempts hitherto made towards a Critical Examination and the Restoration of the Laws of the Twelve Tables* (Leipsic, 1824). But it has been observed by Lelièvre, in his prize essay, *Commentatio de Legum XII Tabularum Patria* (Louvain, 1827), that the Roman and Athenian constitutions and legislation were essentially different from each other, and that no traces of Grecian law are discoverable in the Twelve Tables. Cicero and the Greek writers are also entirely silent as to the supposed Grecian origin of this earliest Western code.

Twickenham; a populous village on the Thames, about ten and a half miles from London. Between Richmond bridge and this village is a rural walk, on the border of the river; and probably no promenade of a similar extent, in any part of England, presents a display of scenery so soft and so highly cultivated. The margin of the Thames is lined with stately dwellings, whose ornamental grounds descend to the water's edge; among which is the residence of Pope. The house was not large, but Pope took great delight in embellishing the grounds. The weeping willow, planted by him, perished in 1801, and another has been planted on the spot. Here he translated a part of the Iliad, and wrote the Dunciad, the Essay on Man, the Epistles, &c., and hence are dated the greater number of his letters; here, also, he died. His villa, was taken down by baroness Howe, in 1807, and a new dwelling erected about one hundred yards from the site. His grotto has been stripped of its most curious spars and minerals, by persons desirous of procuring memorials of the poet. Strawberry hill (Walpole's villa), and its fine collection of *virtù*, are entire. In the church of Twickenham Pope and his parents are interred.

Twilight; the faint light diffused through the atmosphere by the sun, some time before rising, and after setting. The atmosphere, by means of the vapors and clouds, refracts the rays of the sun, and turns them down on the unilluminated parts of the earth. The morning twilight begins, and the evening twilight ends, when the sun is about eighteen degrees below the horizon. When he is below that point, the smallest stars are visible to the naked eye, or it is entirely dark. The duration of the twilight is various. In the equatorial regions it lasts, during the equinox, one hour and twelve minutes, and increases as the sun recedes from the equator. At the poles, where there are six months day and six months night, the twilight continues about two months, so that a great part of the half year's night is illuminated. It is doubly useful, since it shortens the night, and prevents, at the same time, the injurious effect, upon our eyes, of the sudden change from light to darkness.

Twin; one of two young produced at a birth, by an animal that ordinarily produces but one. It is calculated that of eighty human births, one is of twins. Whether twins are begotten contemporaneously or successively is doubtful. Some examinations seem to render the latter more probable. Twins are often as different in body and disposition as other persons. They are often weakly after birth, and require especial care. Many rules are to be observed, during the birth of twins, which this is not the place to state.—In astronomy, *Twins*, or *Gemini*, is a constellation of the zodiac, so called from the *Dioscuri*. (See *Castor and Pollux*.)

Tyburn Tickets. (See *Informer*.)

Tyburn Turnpike, at the west end of Oxford street, London, was formerly the place of public executions.

Tycho (Tyge) **Brahe**, a celebrated astronomer, descended from an old and noble family, was born, in 1546, upon his father's estate at Knub Strup, in Schönen, or Scania, a province then subject to Denmark. From early youth, he showed an inclination for the mathematical sciences. When he was fourteen years old, an eclipse of the sun, which took place exactly at the time predicted by the astronomers, made such an impression upon him, that he afterwards devoted himself with ardor to astronomy. He was sent to the university of Leipsic to study law, but employed himself, while there, almost exclusively in astronomical observations. After his return to Denmark, he married a peasant girl, upon his father's estate, and afterwards travelled to Italy and Germany, but refused the invitation of several princes, who wished to engage him in their service, upon advantageous terms. Frederic II, king of Denmark, gave him a considerable salary, and granted him for life the small island of Hween (Hven), lying in the Sound.* Here Tycho erected, at the king's expense, the castle of Uranienborg, and an observatory. In this retreat, where he was visited by various princes, he framed that system of the universe which is yet known by his name. He assumed the principle that the earth remains fixed and immovable in the centre of the universe, and that the sun and all the heavenly bodies revolve round it; but succeeding astronomers have rejected Brahe's system, and adopted that of Copernicus. (q. v.) We are indebted to his observations for a more correct catalogue of the fixed stars, for several important discoveries respecting the motions of the moon and the comets, and the refraction of the rays of light (q. v.), and for important improvements in astronomical instruments: they served also as the basis of Kepler's astronomical labors. Tycho was likewise a skilful chemist, and found in poetry his recreation from severer studies. He was by no means free from the predilection of his time in favor of astrology, and had a propensity to superstition. His impetuous character, and his fondness for satire, made him many enemies, who prejudiced Christian IV, the successor of Frederic II, against him, so that he was deprived of his pension. On this account, he accepted, in 1597, an invitation of the emperor Rodolph II, who was a great friend to astronomy and astrology, to come to his court at Prague. Here he received a considerable salary and many aids in the prosecution of his studies; but he died in 1601. Tycho was, notwithstanding his faults and weaknesses, a remarkable man for the age in which he lived. His works are written in Latin. Such of his poems as are yet extant, do not possess much poetical merit. The emperor Rodolph purchased his expensive astronomical and other instruments; but they were mostly destroyed after the battle on the Weisseberg, near Prague, in 1620. A large sextant alone remains in Prague. The famous brass celestial globe, which was six feet in diameter, and cost about 3500 dollars, returned to Copenhagen, after various adventures, but perished in the great fire of 1728. Of the castle of Uranienborg, on the island of Hween, only the ruins are now to be seen, in digging among which, in 1823, Tycho's study was discovered. A fuller account of the life of Tycho, and a catalogue of his writings, are to be found in a work entitled *Tycho Brahe*, &c., an essay by Helfrecht (Hof, 1798).

Tychsen, Olaus Gerhard, professor of the Oriental tongues at Rostock, was born in the duchy of Sleswick, in 1734. He studied at the gymnasium of Altona, where he acquired a knowledge of classical learning, and also became acquainted with the Hebrew and Arabic languages, previously to his removal to the university of Halle. There he added to his acquirements a knowledge of the English, the

Hindoostanee and Tamul languages, which he was taught by Schulz, and the Ethiopic, which he studied under Michaelis. Thus qualified, he was employed by a society for the conversion of the Jews and Mohammedans; and, in 1759 and 1760, he traversed various parts of the north of Germany, Prussia, Denmark and Saxony, on this mission. Soon after, he was appointed *magister legens*, at the newly-founded university of Bützow, where he received the professorship of the Oriental languages in 1763. This establishment being suppressed, and reunited to the university of Rostock in 1789, the library which had been collected by Tychsen, and of which he had been keeper since 1770, was removed to Rostock, and still committed to his care. He died in 1815. His works are numerous, including *Tentamen de variis Codicum Hebraicorum Vet. Test. MSS. Generibus* (1772, 8vo.); *Introductio in Rem Numariam Muhammedanorum* (1794, 8vo., with a Supplement); *Physiologus Syrus, sive Historia Animalium XXXII, in S. S. memoratorum, Syriacè* (1795, 8vo.); tracts On Samaritan Coins; On the Nail-headed Characters of Persepolis; and editions in Arabic and Latin of Makrizi's works On the Money and On the Weights and Measures of the Mohammedans. His papers and literary collection were purchased, after his death, for the university of Rostock.

Tympanum (*Greek*); a musical instrument, used by the Greeks and Romans, not unlike the tambourine, beaten with the hand, and much employed in religious ceremonies.—In anatomy, *tympanum* signifies the membrane, or drum, of the ear. In architecture, it is the flat surface or space within a pediment.

Tyndale, William. (See *Tindal.*)

Tyndarides; the twins Castor (q. v.) and Pollux, and their sister Helena (q. v.), so called from their father, Tyndarus, king of Laconia.

Type (from the Greek τύπος, from τύπτω, to strike); die; figure; outline; model. These various significations naturally sprung from the first. The word has been received into various modern languages. In numismatics, it has retained most of its original meaning, and signifies the impression on a coin or medal. In philosophy, it has been used, and is still used, in its most general sense, to designate those forms which are conceived to exist in the mind of the Creator, who regulates the universe (*mens archetypa* in the scholastic phrase), and which determine the character of all individual existence. Kant, in some passages, has used the word *schema* to designate something similar. In nature, *type*, according to this conception, is that form which gives the character of similarity to all the individuals of a species, and at which nature seems continually to aim. To take but one example:—In crystals we find that an individual crystal never presents a perfect mathematical figure; yet we can show the angles, the sides, &c., of the mathematical figure, which nature strives to produce in each particular instance. The case is similar in the fine arts. Though no antique figure of Jupiter is precisely like another, nor any representation of Christ exactly similar to the rest, yet there is the same type in all, which is no vague conception, but can be clearly described. We must not confound this with the *ideal.* The ideal, which is before the eye of the artist, embraces all the peculiarities of his particular conception, as well as the general characteristics of the type, and is that image which he strives to represent in form or color.—In theology, *type* signifies the representative relation which certain persons, events and institutions of the Old Testament are conceived, by some theologians, to have to corresponding individuals, events and institutions in the New Testament; e. g. certain sacrifices, ordained by Moses, are conceived to represent the great sacrifice of Christ—a view of the Old Testament which other theologians consider as unfounded.

Types, Printing. Printing, at the present day, is executed with movable types, which are oblong square pieces of metal, each bearing a letter in relief at one extremity. The metal of which they are made is an alloy, which consists essentially of lead and antimony. The lead is selected in preference to other metals, because it is fusible at a low temperature, and retains accurately the shape it receives from the mould. But as lead alone is too soft to sustain the friction and pressure to which it is liable in use, about a fifth part of antimony is added. This gives it a superior hardness when cast; and as this alloy has the property of shrinking less than most other metals as it cools, the type receives all the sharpness and finish, which it can acquire, by filling every part of the mould. In making types, the letter is first cut by an artist upon the end of a steel punch, answering to the shape of the intended type. This punch is driven into a piece of copper, which forms the matrix, or bottom of the mould intended to produce the letter. As many varieties of punches must be made of steel as there are sizes and species of characters required. In casting, the types are formed with great rapidity, owing to the quickness with which the metal cools. An expert operator will make 2000 or 3000 types in a day. Some machines have been introduced for casting types, which operate with much greater rapidity. The characters upon types are of course reversed, so that, when they are arranged for the press, they stand in an opposite order to that in which they appear on the printed page. Before the types are applied to use, they are arranged in the cells, or compartments, of a long wooden receptacle, called a *case;* each species of letter, character or space by itself. In arranging the compartments, the collections of letters do not succeed each other in alphabetical order; nor are they all of equal size. Those letters which occur most frequently in printing, are required in greater numbers. They are therefore made to occupy the largest compartments, and are placed nearest to the compositor. Thus the letter e, which is of frequent occurrence, fills a large compartment, and is nearest the compositor; while the letter x, which occurs much less frequently, is provided in small numbers, and placed at the extremity of the case. In a bill or collection of types of the size called pica, weighing in all 800 pounds, the number of the letter e is 12,000; of t, 9000; of a, 8500; of i, n, o and s, 8000 each; of c there are 3000; of b, 1600; k, 800; x, 400, z, 200. This is for the English language. In other languages, the comparative frequency must be different. Different names are given to the various sizes of types, of which the following are most employed in common book printing:

Pica.—a b c d e f g h i j k l m
Small Pica.—a b c d e f g h i j k l
Long Primer.—a b c d e f g h i j k l
Bourgeois.—a b c d e f g h i j k l m n o
Brevier.—a b c d e f g h i j k l m n o p q r s
Minion.—a b c d e f g h i j k l m n o p q r s t u v
Nonparcil.—a b c d e f g h i j k l m n o p q r s t u v

(See Bigelow's *Technology;* also the article *Printing.*)

Typhon (*Typhaon, Typhonus, Typhos*); in the Greek mythology, a monster, concerning whom the accounts are various. According to Hesiod, he was the son of the Earth and of Tartarus, who begot him in revenge for the defeat of the Titans and giants by the Olympian gods. Eustathius relates that the Earth, grieved at the defeat of the Titans, had fomented discord between Juno and Jupiter. The former complained to Saturn, who gave her two eggs, with directions to place them upon the earth, declaring that the creature which should issue from them would be powerful enough to hurl Jupiter from his throne. Juno accordingly deposited the eggs upon mount Arime, in Cilicia, but, on being reconciled to her husband, disclosed to him what she had done. Jupiter prepared, therefore, to encounter the monster with his thunderbolts. According to Pindar, Typhon then dwelt in a dark cave, filled with poisonous exhalations (*Typhoneum*): he was larger and stronger than any thing which the Earth had borne. His head reached the stars; his arms extended from east to west; instead of fingers, 100 snakes proceeded from his hands; and around his middle were twined dreadful serpents, which raised themselves above his head, and uttered terrible hissings. His eyes darted fire. Hesiod says, that from a hundred serpent heads flamed fiery eyes, and black tongues darted from their mouths: sometimes he roars like a lion, howls like a dog, or hisses so terribly that the mountains quake. This description answers to that of a tempest, which Hesiod himself declares Typhon to be. He is also described with wings, and is said to have stormed Olympus with masses of heated rocks and flames of fire, and to have made a way to the dwelling of the gods, with dreadful hissings. The gods fled to Egypt, and, when pursued thither, changed themselves into beasts. According to Apollodorus, Jupiter hurled his thunderbolts against him, and threatened him, when he approached nearer, with his adamantine sickle. The monster then fled to mount Casius, or Caucasus, where, after a fierce conflict, he bound the god with his serpents, and threw him into a cave. He then took from Jupiter his sickle, cut the tendons of his hands and feet, and carried him to Cilicia, where he confined him in the Corycian cave. The tendons, having been left in the care of the dragon Delphine, were stolen by Mercury and Ægipan, who cured Jupiter. The latter now pursued Typhon to Nysa, a mountain near the Serbonian lake, where the Parcæ had artfully detained him by offering him refreshments. But Typhon again escaped, and fled to Thrace. Here, on mount Hæmus, ensued a furious fight. Typhon hurled whole mountains upon his enemy, but finally fled to Sicily, where Jupiter buried him under mount Ætna. Hesiod says that he was thrown into Tartarus; and Pindar relates that the Phlegræan fields in Italy were placed upon him, while his head reaches to Ætna. By day he spits out vapors, and by night flames and stones. By Echidna, he had Orthrus, Cerberus, the Chimæra, and the Lernæan hydra. The Nemean lion, the Hesperian dragon, the Caucasian vulture, and the Sphynx, with all noxious winds, were also his children. The whole fable of Typhon is nothing but a symbolical representation of subterranean winds, earthquakes, volcanoes, and their destructive effects.

Typhon; an Egyptian deity, son of Saturn and Rhea, and brother of Osiris, Areris, Isis and Nephthys. His mother's husband, according to Plutarch, was the Sun, who, having surprised her with Saturn, condemned her not to bear either in a year or in a month. Mercury, another of her lovers, relieved her in this emergency. By playing at dice with the Moon, he won the seventy-second part of each day, and of this composed five days, which he gave to Rhea, and which served the Egyptians as intercalary days to complete their year. Rhea gave birth to the third class of Egyptian gods, and Typhon was born on the third of the days thus obtained. Typhon aspired to the sovereignty of Egypt, possessed by his brother Osiris. His designs were for a long time frustrated by Isis, wife of Osiris; but the latter, while on his return from a tour round the world, was killed by his brother, who cut his body in pieces, and threw it into the Nile. During the reign of Typhon, all kings laid aside their crowns, in token that they had submitted to his supremacy. When Horus, the youngest son of Isis, had grown up, he overcame Typhon, after a severe conflict, and sent him bound to his mother. Isis, however, set him free, and the war was renewed. Typhon was defeated a second time, and continued his flight seven days upon an ass. He now begot Hierosolymus and Judæus, who, according to Tacitus, led the Jews out of Egypt. He is said to have escaped from Horus by changing himself into a crocodile. According to another account, Mercury or Hermes conquered him, and made cords of his tendons. Herodotus says that he hid himself in lake Serbonis (see the preceding article), which was thence called from him by the Egyptians. His sister Nephthys was his wife. With the Egyptians, he was an evil deity, the author of all evil in the world. His name is said to signify the destructive south wind, which dried up the earth: according to others, it signifies the month of drought. All noxious and unclean creatures were sacred to him, as, for instance, the ass, the hippopotamus and the crocodile; and, on certain festal days, he was made a subject of derision and ridicule. In times of excessive heat, of disease, &c., it was customary to shut up some animals sacred to him in a dark place, and threaten them: if the evil was not averted, they were then slain. Red-haired men were treated in a similar manner: they were esteemed sacred to Typhon because he himself had red hair. He is commonly represented under the form of an ass, a crocodile, or a hippopotamus. He is also considered the symbol of the sea, which swallows up the Nile.

TYPHON, or TYPHO (*ecnephius vibrans, vortex*); the same as *hurricane*. (See *Hurricane*, and *Whirlwind*.)

TYPHUS. (See *Fever*, vol. v., p. 105.

TYPOGRAPHY. (See *Printing*.)

TYR, in northern mythology; the son of Odin, brother of Balder; not to be confounded with *Thor*. He was the god of war and victory. The Danes and Icelanders still call Tuesday, after him, *Tirs-day*, or *Tyrs-day*.

TYRANT (from the Greek τυραννος, which signified an absolute ruler). The word did not have originally the bad signification which we now attach to it; but as it is a rule which admits of very few exceptions, that the possessor of uncontrolled power, whether individual, corporation or multitude, will abuse it, *tyrant* came at length to signify an abuser of power, particularly of the chief power in the state. But all ranks and relations afford instances of the misuse of power, when unrestrained by other power, or by interest or affection. Towards the end of the Peloponnesian war, the Lacedæmonians established the government of the thirty tyrants, so called, in Athens, which, however, lasted only eight months. (See *Attica*.) In Roman history, the thirty tyrants were those generals who, under the worthless government of Gallienus (from 259 to 268 A. D.), declared themselves independent masters of the provinces which their armies occupied—Britain, Gaul, Spain, Rhætia, Illyria, Asia, Africa, and even Italy. But the legions themselves, and the successors of Gallienus, Claudius and Aurelian, were victorious over them. The most known among them are Posthumus, Lælianus, Lollianus, Ælianus, Victorinus I and II, Marius, Tetricus I and II, Regalianus, Trebellianus, &c. The coins struck by them, and mostly very rare, are called the "coins of the tyrants."

Tyre; one of the most celebrated cities of antiquity, and, with its elder sister Sidon, the richest and most important commercial city of Phœnicia. The insignificant village of Sur, or Sour, in the pachalic of Acre, now occupies its site; lat. 33° 13′ N.; lon. 35° 13′ E.; eighteen miles south-west of Sidon. Sour is situated on a neck of land which was formerly an island, but was joined to the main land by Alexander, at the siege of Tyre. "There appear to have been," says Madden, "two cities of that name adjoining one another, the great Tyre being situated about five miles south of the now peninsular Tyre, which appears, from Strabo's description, to have been inhabited only by sailors, and persons connected with the shipping." As early as 1200 B. C., Tyre was a powerful city, enriched by commerce and refined by the arts. (See *Phœnicia.*) The ancient Gades (Cadiz) and Carthage were Tyrian colonies. Syria and Phœnicia had been some time under the power of Alexander the Great, when he made preparations for the conquest of this place. Built on an island, it was separated from the continent by an arm of the sea half a mile in breadth. The conqueror made several unsuccessful attempts to take it; but he at length formed a project to fill up the strait, and unite the island to the continent. The city was taken in the seventh month after it had been besieged. The Scriptures reckon among the number of the illustrious men of Tyre, king Hiram, the friend of David and Solomon. Two councils were held at Tyre; the first in 335, when Athanasius was stripped of his bishopric and banished from Alexandria, and the other in 448, the result of which was to absolve bishop Ibas, accused of supporting the errors of Nestorius. Tyre was the seat of an archbishop, subject to the patriarch of Antioch, and had fourteen suffragans dependent on it. Relics of the splendor of the ancient city are every where to be seen, as, numerous and beautiful columns stretched along the beach, ruins of an aqueduct, &c.

Tyre, Æra of. (See *Epoch.*)

Tyrol, or **Tirol**; a province of the Austrian empire, bordering on Bavaria, Austria, Illyria, the Lombardo-Venetian kingdom, Switzerland, and lake Constance, comprising a superficial area of 1650 square miles, and a population of 774,457 souls. Of all the countries in Europe, Tyrol is the most exclusively mountainous. The Tyrolese Alps extend through the country. Some of the most remarkable summits are Ortler, Glockner and Brenner. (See *Alps.*) Tyrol resembles Switzerland: the valleys and lakes are less extensive, the cascades less numerous; but there is the same sublime scenery, similar lofty and perpendicular mountains, covered with perpetual snow and ice; the same contrast of the beautiful and terrific, of vineyards and wastes, of uninhabited summits, and populous valleys. No country contains a more romantic road than that over mount Brenner, along the Adige. (See *Alps, Roads over.*) The climate, in consequence of the height of the mountains, is cold. Among the productions are corn, wine, silk, hemp, flax and tobacco. The quantity of corn is not sufficient for the inhabitants. In many parts the raising of cattle is the principal employment. Almost all kinds of minerals have been found; but the only mines that have been worked to advantage are those of salt, iron, copper and calamine. There are no less than sixty mineral springs in the country. The Lech, Etsch, Isar, Drave and Brenta rise in Tyrol. The Inn, which rises in Switzerland, traverses it. The Rhine only touches its borders. Lakes Constance and Garda are also on its frontiers. The manufactures of silk and of metallic wares are the most important; cotton and linen goods are also manufactured. The position of Tyrol between Germany and Italy, and the facilities for passing over the Alps by good roads, render it the theatre of considerable transit trade. The Tyrolese wander all over Europe, and are even seen in America, peddling small wares; but they always return to spend their savings at home. The number which leave the country annually in this way is estimated at 30,000 or 40,000. The Tyrolese are chiefly of German extraction; only about 150,000 in the southern part of the country being Italians. The prevailing religion is Catholic. The Tyrolese is gay, lively, faithful, honest, and ardently attached to his country. Hunting is the chief amusement of the people. The estates of Tyrol were confirmed in their former privileges in 1816. There are four estates—the prelates, the nobles, the citizens and the peasants. The seat of the government authorities is Innspruck; the principal fortress Kuffstein. This country was first conquered by the Romans in the time of Augustus, and at a later period was traversed and desolated by various barbarous tribes. The Franks, and, after the extinction of the Carlovingian dynasty, the dukes of Bavaria, obtained the sovereignty; but some of the counts continued to be powerful. In 1359, Margaret Maultasche, the only daughter of one of these, conveyed her possessions to the duke of Austria; and Tyrol has since belonged to that power, with the exception of a short time from 1805 to 1814. (See *Austria.*)

Tyrrhenia, Tyrsenia; the ancient name of that part of Italy afterwards called *Etruria.* Niebuhr has proved that the Tyrrhenians, or Tyrsenians, were a Pelasgic race, and entirely different from the Etruscans, who occupied the country, and gave it their name at a later period. Much confusion has been produced in history from confounding the two nations. (See *Etruria*, and *Tuscany.*)

Tyrtæus, an ancient Greek poet, celebrated for his martial strains, is said to have been a native of Miletus, who settled at Athens in the capacity of poet, musician and school-master. He is described as being short, lame, and blind of one eye; but he possessed a manly and elevated soul. In the war between the Lacedæmonians and Messenians, the former were promised victory by the oracle, if they obtained a general from Athens. The Athenians, it is supposed in derision, sent them Tyrtæus, who so animated the Spartans by his spirited strains, and aided them so effectually by his advice, that the Messenians were reduced to subjection. For these services, the Spartans treated him with great respect, and granted him the rights of citizenship. The war poems of Tyrtæus must have been in high repute, as Horace joins him with Homer in that department. He also composed Moral Precepts, and a work On the Policy of the Lacedæmonians. Some fragments of his war poems remain, which are characterized by their masculine simplicity. They have been published with the other minor Greek poets, and separately by Klotz (Altenburg, 1767). Matthiä has written a treatise *De Tyrtæi Carminibus* (Altenburg, 1821).

Tyrwhitt, Thomas, a profound scholar and distinguished critic, born in 1730, was educated at Eton and Oxford, where he took his degrees, and, in 1755, obtained a fellowship at Merton. He was acquainted with almost all the European languages, as well as those of classical antiquity. In 1756 he was appointed under secretary in the war department, and, in 1762, succeeded Mr. Dyson as clerk of the house of commons. This office he resigned in 1768; and the remainder of his life was devoted to study. His death took place in 1786. Mr. Tyrwhitt published a valuable edition of the Canterbury Tales of Chaucer, with a Glossary (1778, 5 vols., 8vo.; reprinted, Oxford, 1798, 2 vols., 4to.); *De Babrio* (Gabriæ) *Fabularum Æsopearum Scriptore* (London, 1776, 8vo.); *Auctarium Dissertationis de Babrio adjecit Tyrwhitt sua Orphei de Lapidibus Edit.* (1781, 8vo.); Rowley's (Chatterton's) Poems, with a Preface and Glossary (8vo.); Vindication of the Appendix to Rowley's Poems, with Observations on these Poems; Poems in English and Latin, which were his earliest productions. Mr. Tyrwhitt likewise left materials for a new edition of the Poetics of Aristotle, which was printed at Oxford, in 1794 (4to. and 8vo.).

Tythes. (See *Tithes.*)

Tytler, Alexander Fraser (lord Woodhouselee), one of the senators of the college of justice in Scotland, was born at Edinburgh, in 1747, and died in 1813. He published the Decisions of the Court of Session in the Form of a Dictionary; and, having been elected professor of history at Edinburgh, he printed, in 1783, Outlines of a Course of Lectures on Universal History (8vo.), which was followed by his popular work Elements of general History, Ancient and Modern (2 vols., 8vo.). Among the other works of lord Woodhouselee are Memoirs of Lord Kames, containing Sketches of the Progress of Literature in Scotland in the Eighteenth Century (1807, 2 vols., 4to.), with a Supplement (1810, 4to.), and an Essay on the Life of Petrarch (London, 1810, 8vo.). Memoirs of his life, by Alison, were published in the Transactions of the Royal Society of Edinburgh, vol. viii.

Tzschirner, Henry Theophilus, doctor of theology, pastor in Leipsic, and professor in the university of that city, was born in 1778, at Mitweida, in the kingdom of Saxony. In 1796, he entered the university of Leipsic. In 1800, he received permission to lecture in Wittemberg; but, in 1801, the circumstances of his family obliged him to undertake the duties of the clerical office. He continued his studies, however, uninterruptedly, and, in 1805, published the first part of a History of Christian Apologetics, with a preface by Reinhard; but he never continued the work, having become quite dissatisfied with the plan of it. In the same year, he was appointed *professor ordinarius* in Wittemberg. In 1809, he received a chair at Leipsic, where he showed himself a "rational supernaturalist," adhering to principles which he subsequently developed in his Letters on Reinhard's Confessions (Leipsic, 1811), as Reinhard had maintained that the entire separation of rationalism from supernaturalism was indispensable. In 1814, he accompanied the Saxon troops, under the grand duke of Weimar, as chaplain. After his return from the war, he published the results of his experience in his work On War (Leipsic, 1815). In 1815, the corporation of Leipsic appointed him a minister in the city. In 1821, he published his Explanation of Haller's Secession, and, in 1822, Catholicism and Protestantism in a Political Point of View, which, in a short time, went through three editions, and was translated into English, French and Dutch. Both these works were occasioned by Louis von Haller's becoming a Catholic. (See *Haller*.) Soon after, he manifested much interest in the Greek revolution, and, somewhat later, published his Danger of a German Revolution (2d ed., 1823), and System of Reaction (1824). In 1822, he undertook the editorship of the Magazine for Ministers. In several works, he attacked the arrogance of Catholicism and the mysticism of Protestants. He also wrote a series of Letters of a German to French Scholars (Chateaubriand, De la Mennais, Montlosier, Constant).[*] His last work was, How did it happen that France remained Catholic? in Pőlitz's (q. v.) Annals of History and Politics. He died suddenly, in 1828, having many works in contemplation; among others, a History of the Church in his time. Tzschirner was enthusiastically beloved by his fellow-citizens, and much respected, even by the Catholics.

U.

U; the twenty-first letter in the English alphabet; a vowel which is pronounced, in most languages, somewhat like *o*. But the mouth is less pointed, and the opening of the lips, therefore, less round, but closer, in pronouncing the former vowel. The sound which we refer to is that of the Italian or German *u*, corresponding to the English *oo*, as in *tooth*, or *u* in *brute*. The character *u*, in English, like the other vowel characters in this language, represents various sounds, as in the words *tube*, *tub*, *bull*. The pronunciation of *u* in the last-mentioned word is the same sound short which we find long in *truth*, *rule* and *prudence*. The German *u* is often changed, by the rules of grammar and etymology, into *ű*, which corresponds to the French *u*, as in *plus*. The Germans early adopted the alphabet of the Romans, and, not finding there a character for the French *u*, used the compound character *ui* for this sound, being an intermediate sound between *i* (as in *pin*) and *u* (as in *brute*). Some, however, soon wrote it *ue*, which became changed into *u̇* and *uͤ*, and these, in the current handwriting, into *ű*, as the *e*, in the German current hand, may be easily changed into two such dashes; but, in German printing, the sign put over the *u*, in such cases, is still a small *e*. In printing with Latin characters, the Germans substitute for *ű* *ue*, or *ü*. In the German words printed in this Encyclopedia, we have preferred to use the two dashes, as the use of *ue*, or *ü*, might lead an inexperienced reader into mistakes. A similar remark is applicable to the character *ő* in this work.—*U* is so nearly related to *o*, that they often pass over into each other in various dialects. (See our article *O*.) The Latins called *u* a vowel, but said that it often had the power of a consonant, which we now designate by *v*; and it is true that *u*, before some vowels, cannot well be pronounced without partaking much of the nature of a consonant, as in *uaco*, *uelox*, *silua*, now written *vaco*, *velox*, *silva*. The primitive sound of *u* in these cases, however, does not resemble the present sound of *v*, but that of the English *w*, which corresponds to *oo* before a vowel, and therefore to the *u*[*] of many modern nations, the Germans, Italians, Spanish, &c. The sound which *v* has now acquired is so different from the sound of *u*, that there seems to be no propriety in mingling the letters in dictionaries and encyclopedias. As the ancient Roman abbreviations were made with capital letters, and the character *v* was used for the capital form of both *u* and *v*, none of their abbreviations belong to this place. *U. S.* is the abbreviation of *United States*. (See, also, the vulgarism *U. S.*, mentioned in the article *John Bull*.)

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[*] Edited by Krug, though unfinished. The same was the case with his intended Fall of Paganism, edited by Niedner, which would have been probably his largest work.

Ubes, St. (See *Setubal*.)

Ubiquity; a word made in the fashion of the Latin of the scholastic philosophy, to signify universal presence. Luther gave the name of *ubiquity* to that quality of the body of Christ by which it is present every where in the bread of the Lord's supper. The term had already become disagreeable, in consequence of the heat of the first disputes respecting the Lord's supper, when the Lutheran ministers at Bremen applied it, in 1556, in a sense still more opposed to reason in their controversies with the Calvinists; and at Wurtemberg, in the creed drawn up in 1559, by John Brenz, it was made a fundamental point of the orthodoxy of the church in that country. As the Calvinists acknowledged a real presence of the body of Christ in the Lord's supper, though only perceptible by faith, these Lutherans, in order to make a marked distinction between themselves and their opponents, started the doctrine of the real mutual communication of the qualities of both natures in Christ (*communicatio idiomatum*), and strove to prove by it that the body of Christ is necessarily present in, with and under the bread in the Lord's supper every where, without reference to the faith of the communicants. As this notion drew upon them the names of *Ubiquists* and *Ubiquitists*, and was exposed to the reproach of similarity with the Catholic doctrine of transubstantiation, the authors of the formula of Concord (q. v.), called the *Book of Berg*, declared explicitly that the ubiquity of Christ's body does not take place in a material way. In 1610, a new dispute arose respecting this ubiquity between the theologians of Tübingen, who zealously adhered to it, and the theologians of Giessen; but the interest in this question ceased with the advance of theological science. The German Lutherans and Calvinists now generally agree that Christ is present in the Lord's supper to those who receive it with a proper spirit, but that it must, and safely may be, left to each individual to decide (or to leave undecided) in what way this presence, and the union of his body with the bread (*unio sacramentalis*) takes place, or is to be imagined.

Ugolino. (See *Pisa*.)

Uguale, in Italian music; *equal*.

Uhland, John Louis, a distinguished German poet, was born in 1787, at Tübingen, where he studied law from 1805 to 1808. In 1810, he went to Paris, where he devoted himself principally to the manuscripts of the middle ages. He published, at a later period, translations of early French poems. His earliest published poems were written in 1804. He gave to the world a collection of his poems in 1814 (3d ed., 1826). In 1812, he was a practising lawyer in Stuttgard. In 1815, when a great political excitement existed throughout Würtemberg, Uhland's patriotic songs became very popular, and contributed not a little to strengthen the patriotic spirit. In 1809, he was elected a representative of Tübingen, and has, we believe, ever since continued in the chamber. Uhland is undoubtedly one of the best lyric poets of Germany. There is a truth, a warmth, an intensity of feeling, in his poems, which stir the heart. His patriotic songs are often noble, but would have a far more elevated character if the state of his country was such that, instead of being the poet of Würtemberg, he could be the poet of Germany. His dramatic works—Duke Ernest of Suabia (Heidelberg, 1817) and Louis of Bavaria (Berlin, 1819) are less distinguished.

Uist, North and South. (See *Hebrides*.)

Ukase (*Russian*) signifies an ordinance of the government of the Russian empire. (See *Russia*.)

Ukraine (*the frontier*; from the Teutonic word *Uker*); an extensive country in the south-east part of Russian Poland, now forming the Russian governments of Kiev, Podolia, Charkow and Poltava; lying between lat. 48° and 52° N. It is watered by the Dnieper, which intersects it in a winding course from north to south. The chief town of Ukraine is Kiev; the chief outlet for its exports is Odessa. The surface is generally level; and it is one of the most fertile parts of

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[*] The resemblance in sound between *w* and the German *u* appears from the circumstance that, in dictionaries intended to teach Germans the pronunciation of English words, *u* is written for *w*; for example, the English *wane* is written *uen*. In French, our *w* is expressed also by *ou*; thus *Washington* is pronounced *Ouashingtonne*.

Europe. The heat of summer and cold of winter are intense in this region.

Ulans; a species of light cavalry, of Tartar origin. From the Tartars it was introduced into Poland. The Austrians adopted it next; the Prussians, in the seven years' war; and, at the present day, almost all armies have some of this cavalry, whose chief weapon is a lance, generally, or always, provided with a little flag, in order to frighten the horses of the enemy. They are always light troops, and are particularly useful in taking squares. (See *Lance*, and *Cavalry*.)

Ulema is the collective name for the Turkish jurists, considered, at the same time, as priests; for the law of the Turks comes from Mohammed, as well as their religion; and the Koran is their code. The chief of the ulema is the mufti. (q. v.) After him follow the cadileskiers, of whom there are three, one in Europe, one in Asia, and one in Egypt. They have a vote in the divan, and appoint all the cadis in their district. No one can become a mufti who has not been a cadileskier. The third class of the ulema consists of the mollahs (q. v.), who are the superior judges in the provinces. After them follow the cadis, who every where decide in the first instance.

Ulfilas, Ulphilas, or **Wulfilas**, was born in Cappadocia, and, from 360 to 380, was bishop of the Christian Goths in Dacia and Mœsia (the *Mœso-Goths*, so called), with whom he had a very great influence. He induced them to adopt the Arian doctrine. He was learned for his age, and was sent several times as ambassador to the court of Constantinople. The invention of Gothic letters is generally ascribed to him; but probably the Gothic written character only became more common through his means. He translated the Bible into the Mœso-Gothic dialect. Of this remarkable translation, the most ancient monument of the German language, considerable fragments have come down to us, particularly the Gospels. The *codex argenteus*, so called, at Upsal, contains the four Gospels, and a manuscript in Wolfenbüttel contains fragments of the Epistle to the Romans (best edition by Zahn and Fulda, Weissenfels, 1805, 4to.). The zealous scholar Angelo Maio (q. v.) has discovered in the library at Milan manuscripts of Ulfilas, from which the breaks in his translation may be supplied.

Ullage of a cask, in gauging, is what it wants of being full.

Ulloa, don Antonio di; a celebrated Spanish mathematician, born at Seville, in 1716, and brought up in the royal marines, in which he obtained the rank of lieutenant-general. Having distinguished himself as an engineer and man of science, he was, in 1735, joined in a commission with don George Juan and others, to measure a degree of the meridian in Peru. He remained nearly ten years in South America on this occasion, and, on his return to Europe, in 1745, was intercepted, and carried into an English port. Here his talents and character recommended him to Folkes, president of the royal society, of which he was elected a member in the same year. On his return to Spain, he published his voyage to South America (*Relacion historica del Viage a la America Meridional*, Madrid, 1748), which was soon translated into German, French and English; but the latter version (1758, 2 vols., 8vo.) is inaccurate. He was afterwards appointed by Ferdinand III to travel over Europe, to collect information in regard to improvements in the arts, sciences and agriculture. He promoted the royal woollen manufactories, newly organized the colleges of history and surgery, superintended and completed the basins at Ferrol and Carthagena, and gave new activity to the quicksilver mines of Almadan. In 1766, he was made governor of Louisiana, which had been ceded to Spain. In 1772, he published *Noticias Americanas sobre la America Meridional, y la Septentrional-Oriental*, containing disquisitions upon the peopling of America. The *Noticias secretas di America*, first published in 1826 (London, folio), consists of the confidential reports of Juan and Ulloa to the Spanish ministry, which had been suppressed as discreditable to the country. Ulloa died in 1795. He must not be confounded with don *Bernard*, a near relation, who published, in 1740, a work On the Revival of the Manufactures and Commerce of Spain.

Ulm, on the left bank of the Danube, at the confluence of that river with the Iller and Blau, was formerly a free imperial city, in 1803 was attached to Bavaria, and, in 1810, to Würtemberg. It has 11,888 inhabitants. The Danube at this place is 200 feet wide. Its situation, in a military point of view, is highly important; and it would be so likewise in a commercial point of view, were it not for the ruinous systems of imposts which clog the wheels of trade throughout Germany. The cathedral is celebrated, and, though the steeple is unfinished, is one of the finest specimens of Gothic architecture. It was begun in the fourteenth century. The foundation was laid in 1377, and the church was completed, as far as it went, in 111 years. It is 152 feet high, and the unfinished steeple 337 feet high. The city capitulated to Napoleon October 17, 1805, and general Mack, with 24,000 men, became prisoners of war. It has been repeatedly contemplated to make Ulm a fortress of the Germanic confederacy, as Mayence is. There is much manufacturing industry in this place.

Ulmin; a very peculiar substance, which exudes from the trunk of a species of elm, the *ulmus nigra.* It differs essentially from every other known body, and must therefore be regarded as a new vegetable principle. In its external appearance, it resembles gum. It is solid, hard, of a black color, and possesses considerable lustre. Its powder is brown. It dissolves readily in the mouth, and is insipid to the taste. It is completely insoluble both in alcohol and ether. M. Dobereiner says, that gallic acid is convertible into ulmin, by combining the acid with ammonia, and exposing the compound to oxygen.

Ulphilas. (See *Ulfilas.*)

Ulpianus, Domitius; an eminent lawyer, the tutor, friend and minister of the emperor Alexander Severus. When Alexander became emperor, one of his first acts was to recall Ulpian, who had been exiled by Heliogabalus, and to place him at the head of his council of state. He was also made secretary of state, and ultimately pretorian prefect. He lived in great repute for his wise and virtuous administration, until the emperor, probably at his suggestion, undertook the dangerous task of reforming the army. The discontent of the soldiery broke out into a mutiny, and Ulpian, pursued by a body of them, was massacred in the presence of the emperor and his mother, in the year 228. Ulpian has obtained the praise of all the heathens; but the Christians accuse him of a determined enmity to them, which he carried so far as to collect all the edicts and decrees of the preceding sovereigns against them. There are remaining of Ulpian twenty-nine titles or fragments, which are inserted in some of the editions of the civil law.

Ultimatum (from *ultimus*, last), in modern diplomacy; the final conditions offered for the settlement of a dispute between two governments. Ultimatums are often as numerous as the last appearances of a distinguished actor; as, for instance, the long series of Russian ultimatums delivered to the Porte before the last war between Russia and Turkey.

Ultra; a prefix in modern politics, to denote those members of a party who carry its notions to excess. In 1793, those persons were called *ultra revolutionists* who demanded much more than the constitution then adopted allowed. When the Bourbons returned to France in 1815, the words *ultra-royalists* and *ultra-liberals* were much used, and have become common on the European continent wherever political parties are allowed to exist.

Ultramarine; a beautiful and unchangeable blue pigment, which was originally obtained only from the rare mineral lapis-lazuli (q. v.), but which has of late been manufactured artificially. The method of preparing the ultramarine from lapis-lazuli is as follows:—The mineral is made red hot, and thrown into water, to render it easily pulverizable. It is then reduced to a fine powder, and intimately combined with a varnish, formed of resin, wax, and boiled linseed oil. This pasty mixture is put into a linen cloth, and repeatedly kneaded with hot water: the first water, which is usually dirty, is thrown away; the second gives a blue of the first quality, and the third yields one of less value. The process is founded on the property which the coloring matter of lapis-lazuli has of adhering less firmly to the resinous cement than the foreign matter with which it is associated. The artificial ultramarine was discovered by M. Guimet, a French chemist. He was led to the discovery by accidentally noticing a fine blue color upon the hearth of one of his furnaces, which color appeared to be identical with that of the ultramarine. The substance, when analyzed, was found to consist of sulphur, sodium, silex, and alumine; and, by combining these principles in the proportions found in the pigment, the artificial ultramarine was formed. The new product is said to possess a color equally rich with that of the mineral ultramarine; and it is now so extensively manufactured as to become an object with painters and colormen, in point of economy, to substitute it in room of cobalt, in the bluing of paper, thread, and stuff, in which this material has been heretofore employed. The discoverer has purchased a situation near Lyons, in which he is about to establish a manufactory on a large scale, so as to satisfy the demands of commerce. M. Guimet has proved by experiment, that a pound of his ultramarine of the second quality, and which can be afforded at twenty francs, will blue as much paper as ten pounds of cobalt, which, at wholesale, costs twenty-six francs; and an important advantage of the former is, that, on account of its lightness, it spreads more uniformly over paper. Since his success in this application of the new color, he has tried it in dyeing, and has obtained upon linen, cotton, and silk, a degree of success which encourages the hope of an ultimate and decided superiority over indigo. M. Guimet offers his ultramarine for bluing paper at sixteen francs the pound.

Ultramontanism (from *ultra montes*, the other side of the mountains, i. e. Alps). As the nations north of the Alps—France, Germany, &c.—have been most opposed to the papal assumption of absolute power, they have termed the endeavors of the Roman *curia* to extend the papal authority and destroy the consequence of the national churches, such as the Gallican church, *ultramontanism*. The name has been particularly used of late years, since the attempts of the Roman court, during the reign of the elder line of Bourbons in France, to arrogate powers wholly inconsistent with the present state of civilization. We have spoken of the influence of the pope in the middle ages, in the article *Pope;* have given, we believe, deserved praise to that great man, Gregory VII (q. v.), and have not denied the good which even the Jesuits (q. v.) have done; but the times have changed, and that influence, which, centuries ago, was a benefit to nations during the prevalence of general disorder, would be in the highest degree detrimental at the present day. Modern history is made up, in a great measure, of the struggles of the nations to disenthral themselves from the control of the Roman see; and we may be allowed to observe, that one of the circumstances which have essentially contributed to the developement of free institutions and the general advancement of civil government in England, has been the absence of foreign nuncios in that country, since the twelfth century, when the archbishop of Canterbury was declared the permanent legate of the pope. She has thus escaped the violent struggles against the papal power, which have convulsed the governments and nations of Germany and France. In the latter part of the last century, the political influence of the pope declined rapidly, and continued so to do, until, under Napoleon, it ceased entirely. But, after the return of the Bourbons, ultramontane principles were more and more boldly proclaimed in France, and, though sometimes opposed, were, on the whole, favored by the government. This alone would have been sufficient to place the Bourbons in decided opposition to the nation, and, sooner or later, bring on their ruin. A man may be a good Catholic, and yet wholly opposed to ultramontane principles; as, for example, most, perhaps all, the German Catholics distinguished for learning and talent are so. Those who explain the canon law on ultramontane principles, are called *curialists*. (See *Curia.*) Ultramontanism may be briefly described as the endeavor to render the Catholic churches of the various countries more subservient to the pope than is compatible with the existing ecclesiastical laws of the various countries, with the rights of the bishops and sovereigns, with the independence and intellectual freedom of each country, and with various elements of Catholicism itself. Its principles are decidedly in the spirit of Gregory VII, who wished the pope to be bishop every where, and to leave to the various bishops only such rights and privileges as he had not reserved for himself. General councils were not to meet nor sit without his permission, and national governments, of course, to have no influence upon national churches, farther than the Roman see should think fit. We do not know whether we should treat the infallibility of the pope as a principle of ultramontanism, since it is a theory almost entirely exploded among German and French Catholics, even such as in other respects might be called ultramontane. Among the books that have been written on this subject, are count Montlosier's work against the sovereignty of priests—*Mémoire à consulter sur un Système religieux et politique, tendant à renverser la Religion, la Société et le Trône* (Paris, 1826). The three most eloquent defenders of ultramontanism, before the revolution of 1830, were count de Maistre (q. v.), M. de Bonald, and especially the abbé de la Mennais, whose work *De la Réligion considerée dans ses Rapports avec l'Ordre politique et civil*, defends the supremacy of the ecclesiastical power over the secular in all states, declares all Protestants, and even the Jansenists, atheists, and affixes the same stigma to the government, because the *charte* (q. v.) of France allows freedom of religious worship, &c. The work was seized, and the author brought before the tribunals; but sixteen French bishops and archbishops, among whom were two cardinals, expressed, in decided terms, their hostility to this kind of ultramontanism, in an instrument dated Paris, April 3, 1826, and put into the hands of the king, April 10. Hyacinth, archbishop of Paris, M. de Quelen, and the cardinal de Clermont-Tonnère, archbishop of Toulouse, wrote letters in approbation of this step. The ultramontane periodical, the *Giornale Ecclesiastico di Roma* (which has now ceased altogether), was prohibited to be circulated in France.

ULYSSES (in Greek, *Odysseus*); a king of the islands of Ithaca and Dulichium, son of Anticlea and Laertes. He became one of the suitors of Helen; but, as he despaired of success, he solicited the hand of Penelope, the daughter of Icarius. The rape of Helen did not long permit him to remain in Ithaca, and he was summoned to the Trojan war with the other princes of Greece. He pretended insanity, to avoid leaving Penelope; but Palamedes, by placing before the plough of Ulysses his son Telemachus, convinced the world that the father was not mad, who had the providence to turn away the plough from the furrow, not to hurt his child. Ulysses was therefore obliged to go to the war, where he distinguished himself by his sagacity. By his means, Achilles (q. v.) was discovered among the daughters of Lycomedes, and Philoctetes (q. v.) was induced to abandon Lemnos. He was not less distinguished for his activity and valor. With Diomedes he murdered Rhesus, and slaughtered the Thracians in their camp. He also introduced himself into the city of Priam, and carried away the Palladium of the Trojans. (See *Palladium*.) For these services he was rewarded with the arms of Achilles. After the war, Ulysses was exposed to a number of misfortunes, before he reached his native country. He was thrown upon the coasts of Africa, and visited the country of the Lotophagi, and of the Cyclops in Sicily. Polyphemus seized him, with his companions, five of whom he devoured (see *Polyphemus*); but the prince, having intoxicated him and put out his eyes, escaped from the cave. Æolus gave him, confined in bags, all the winds which could obstruct his return to Ithaca; but the curiosity of his companions to know what the bags contained, proved nearly fatal. The winds rushed out, and all the fleet was destroyed, except the ship which carried Ulysses. Then he was thrown upon the coasts of the Læstrygones, and of the island Æea, where Circe changed his companions into pigs. He escaped their fate by means of an herb which he had received from Mercury; and, after he had obliged the magician, by force of arms, to restore his companions to their original shape, he yielded to her charms, and made her mother of Telegonus. He visited the infernal regions, and consulted Tiresias how to return with safety to his country; and, after he had received the necessary information, he returned on earth. He passed along the coasts of the Sirens unhurt, by the directions of Circe (see *Sirens*), and escaped the whirlpools and shoals of Scylla and Charybdis. On the coasts of Sicily, his companions killed some oxen sacred to Apollo, for which the god destroyed the ships; and all were drowned except Ulysses, who swam to the island of Calypso, where, for seven years, he forgot Ithaca, in the arms of the goddess, by whom he had two children. The gods at last interfered, and Calypso suffered him to depart. Neptune, still mindful that his son Polyphemus had been robbed of his eyes by Ulysses, raised a storm and sunk his ship. Ulysses swam to the island of the Phæacians, where the kindness of Nausicaa, and the humanity of her father, king Alcinous, entertained him for a while. He related his misfortunes to the monarch, and was conducted in a ship to Ithaca, after an absence of twenty years. He was informed that his palace was besieged by suitors, who continually disturbed the peace of Penelope; and, therefore, he assumed the habit of a beggar, by the advice of Minerva, and made himself known to his son and his faithful shepherd Eumæus. The suitors were put to death, and Ulysses restored to peace and the bosom of his family. He lived about sixteen years after his return, and was at last killed by his son Telegonus, who had landed in Ithaca, with the hopes of making himself known to his father. The adventures of Ulysses on his return are the subject of Homer's Odyssey.

UMBAGOG; a lake in New Hampshire and Maine, lat. 44° 42′ N. The greater part of it is in Maine: the part belonging to New Hampshire is within the townships of Errol and Cambridge. It is eighteen miles long and ten broad.

UMBER, or UMBRE (Italian *ombria*), in painting; a kind of dry, dusky-colored earth, which, diluted with water, serves to make a dark-brown color, usually called with us a *hair* color. This substance was originally obtained from Ombria, the ancient name of the duchy of Spoleto, in Italy.

Umpire. (See *Arbitrator.*)

Uncial (Latin, *uncia*, a twelfth); a term applied to letters standing for words in inscriptions and epitaphs. Manuscripts written with uncial letters possess, from that circumstance, a proof of considerable age, since these characters have not been in use since the seventh century.

Unction, Extreme, has been, since the twelfth century, one of the seven sacraments (q. v.) of the Catholic church: the council of Trent also declares it to be a sacrament (sess. xiv, canon 1 et seq.). It is performed, in cases of mortal disease, by anointing the head, the hands and the feet with oil consecrated by the bishop, and accompanied with prayers. (See *Chrism.*) As it has, according to the opinion of the Catholics, sacramental power (that is, it effects the purification of the dying person from his sins, and a communication of the divine forgiveness), it can only be administered by a bishop or priest; and, because it requires piety on the part of those who receive it, it is allowed to such sick persons only as are permitted to partake of the Lord's supper. Small children and excommunicated persons are, therefore, not permitted to receive it. The Catholic church derive their opinion of the efficacy of extreme unction from the custom of the apostles to anoint the sick with oil, accompanied with prayer (*James* v, 14 and 15), in order, by this means, to console them and promote the good of their souls. The Protestants deny the sacramental signification and power of this ceremony, because nothing is known of a formal establishment of it by Christ himself. In the Greek church, it is administered, not only to dying persons, but generally, in diseases of all kinds, as tending to promote the restoration of health and the forgiveness of sins.

Underwalden. (See *Unterwalden.*)

Unicorn. According to Von Zach's examination of the accounts given, in ancient and modern times, of the unicorn, the opinion of its fabulous character, which has prevailed since the time of Buffon, does not rest on sufficient grounds. In the country of the ancient Meroë, a beast of this description is found, of the size of a cow, and the form of an antelope; and the male has upon his forehead a long and straight horn.

Uniformity, Act of. (See *Non-Conformists.*)

Unigenitus Dei Filius, &c., are the first words of a bull issued by pope Clement XI, in 1713, which, under the name of *Constitution of Unigenitus*, has acquired a celebrity very dangerous to the papal authority and the peace of the Catholic church. This bull condemns 101 propositions drawn from the work of Pasquier Quesnel, priest of the oratory (q. v.), entitled *Le nouveau Testament traduit en Français, avec des Réflexions morales*. Those who adhere to the bull say that the doctrines contained in those 101 propositions had been already condemned in the writings of Baius and Jansenius. (q. v.) Against the reproach, that the pope had condemned the propositions in mass, without teaching any religious truth, so that the bull could not serve as a rule of faith, the "constitutionists," as the adherents of the "constitution" were called, say that the "anti-constitutionists" were equally regardless of the bull of Innocent X, which, nevertheless, censured every error of Jansenius in particular; and as regards the charge that the condemnation of Baius, Jansenius and Quesnel was occasioned mainly by an intrigue of the Jesuits against the Jansenists, they say, that it is unnecessary to investigate this point, or whether the Jesuits are really enemies to the adherents of St. Augustine's doctrine, since the condemnation has been pronounced and confirmed by four or five successive popes, and that similar doctrines were condemned by the church before the influence of the Jesuits existed, as those of the predestinarians, in the fifth century, of Gothescalc, in the ninth, and those of Calvin, condemned by the council of Trent, in 1547, when the society of Jesuits was just beginning to exist, having been founded in 1540.—The reader who wishes to see the views of the anti-constitutionists further treated must be referred to works written on this subject, also to the article *Unigenitus*, in the *Dictionnaire de Théologie, Extrait de l'Encyclopédie Méthodique* (Toulouse, 1817). We will now state the case as viewed by those who consider themselves disinterested judges. In order to strike a deadly blow at the Jansenists, the Jesuit party at the court of Louis XIV, especially the confessor of the king, Le Tellier, projected the bull *unigenitus*, and extorted it from the pope. The 101 propositions condemned—though those respecting grace will not be acknowledged by all Christians—were taken, almost literally, either from the Bible or other acknowledged authorities of the Catholic church. Quesnel, who, after his exile, lived in Amsterdam, was considered by the Jesuits as the principal champion of the Jansenists since the death of Arnauld and Nicole. The hatred of the Jesuits towards him and the archbishop of Paris, cardinal Noailles, who was almost universally revered, and who had publicly recommended Quesnel's work, and honorably maintained his independence against Le Tellier, affords an explanation of this arbitrary measure. The world was astounded to see the papal condemnation extended, not merely to those passages in which Quesnel, as a true Jansenist, ascribed to divine grace an unconditional and irresistible influence upon the human heart, but also to those which insisted upon purity of motives, on the necessity of true religious love of virtue, and reconciliation with God, on the general use of the Bible, on the correction of the morals of the clergy, and the necessity of a conscientious fulfilment of their duties; and was unable to understand why the chief of the Roman church had yielded so far to the Jesuits and the French court as to issue, under his name, a denunciation of some of the fundamental truths of Christianity; for the bull was considered as such, not only by many Jansenists, but also by many other Catholics in foreign countries. The French parliament, cardinal Noailles, with a large part of the French clergy, the majority of the theologians of Sorbonne, even the French ladies (from whom the bull, by condemning the passage of Quesnel "that women ought to be allowed the means of a thorough knowledge of religion and the holy Scriptures," withholds the fundamental right of Christians), and public opinion, either openly declared against this bull—which was universally considered as the production of the Jesuits—or actively opposed it in private; whilst the Jesuits, through the king, used all the means of power and persuasion to make the bull a law of the realm. But, though a large number could be won over by royal decrees, by bribes, threats, and the arrest of some refractory persons of lower rank, yet nothing was to be effected by these means against the parliament and the archbishop. The former would not enrol the bull as a law of the kingdom, except on certain conditions, which invalidated it almost entirely; the latter at first refused to publish the bull; and when he did proclaim it at a later period, it was with explanations which greatly mitigated its rigor. During this contest, Louis XIV died, without having obtained a complete victory. The streets of Paris resounded with songs in ridicule of the "constitution;" the Parisians gave its name, *Unigenitus*, to the natural daughter of its bearer, the papal nuncio Bentivoglio; numerous pamphlets were written on the question; and all France became divided into "constitutionists" or "acceptants," and "anti-constitutionists," "recusants," or "opponents." During the regency, which was not favorable to the Jesuits, several bishops, in connexion with the members of the Sorbonne and the arch bishop of Noailles, dared to appeal, against the bull, to a general council; and thus the opposition party, which was supported by the most distinguished universities and ecclesiastical corporations, received the name of *appellants*. This party became divided, when Noailles agreed, in 1720, to sign the bull conditionally, and thus excited against himself the zealous appellants. Louis XV, and his minister Fleury, who was desirous of the cardinal's hat, and therefore flattered the Jesuits, treated the appellants with great severity; the priests belonging to the party were discharged; the laymen were refused the sacraments; at length, the court, in 1728, induced the archbishop of Paris, then eighty years old, to sign the bull unconditionally; and, in 1730, the parliament was forced to register it without reservation, by which it became a law of the land. The persecuted appellants remained, nevertheless, active, and, in 1752, the parliament ventured on new and bold steps to remedy the cruel refusal of the sacrament. The contest broke out with renewed bitterness, and at length was assuaged by a moderate brief of Benedict XIV, which ordered severity against open appellants only. In addition to this, the order of the Jesuits was abolished; a consequence of which was naturally the gradual decrease of the importance of the unhappy bull *Unigenitus* in France. In other Catholic countries it had been adopted, indeed, but little observed, as the whole scope of it was directed against a party in France. In the Austrian monarchy, where some bishops had published it, it was formally suppressed in 1781, together with the bull *In Cœna Domini*. It now belongs only to history, as the popes themselves do not insist on it as a rule of faith.

Union Canal. (See *Canals.*)

Unison; that consonance, or coincidence of sounds, proceeding from an equality in the number of vibrations made in a given time by two sonorous bodies; or the union of two sounds, so directly similar to each other in respect of gravity or acuteness, that the ear, perceiving no difference, receives them as one and the same. The ancients were much divided in opinion respecting the question whether the unison be a consonance. Aristotle speaks in the negative. Muris Mersennus, and others, declare in the affirmative. The decision of the question, however, depends on the definition we give to the word *consonance.* If by a consonance we only understand two or more sounds agreeable to the ear, the unison is a consonance; but if we include in the consonance sounds of a different pitch, that is, sounds less or more acute with respect to each other, the unison, by its own definition, is not a consonance.

Unitarians. (See *Appendix*, end of this volume.)

Unitas Fratrum. (See *United Brethren.*)

United Brethren (Protestant), or **Unitas Fratrum**; the official denomination of the religious society commonly known by the name of *Moravians.* This society was originally formed by descendants of the Bohemian and Moravian Brethren (see *Bohemian Brethren*), who, being persecuted for their religious tenets, and non-conformity in their native country, founded a colony, under the patronage of count Zinzendorf (q. v.), on an estate of his, called *Berthelsdorf*, in Upper Lusatia, in the year 1722, to which colony the name of *Herrnhut* was given, on account of its situation on the southern declivity of a hill called the *Hutberg.* It was not until the number of emigrants from Bohemia and Moravia, who there found an asylum, had considerably increased, and many religiously disposed persons from other quarters, attracted by their pious zeal and their sufferings, had settled along with them, that the diversity of sentiments, perceptible among so many zealous Christians of various modes of thinking, suggested to them the propriety of some general agreement concerning faith and rules of conduct. Accordingly, under the guidance of count Zinzendorf, who, from an early age, had entertained an idea of constituting a Christian community, on the model of the primitive apostolic congregations, certain articles of union were proposed among them, which, leaving all the distinctive doctrines of the various Protestant denominations of Christians entirely out of the question, adopted, as articles of faith, only those fundamental Scripture truths in which they all agree, and, at the same time, introduced a system of social compact and church discipline resembling that of the ancient church of the Moravian Brethren, and intended to form a society in some degree such as the primitive churches are represented to have been. All the inhabitants of Herrnhut, after mature consideration, adopted this social scheme and these statutes, by the name of a brotherly agreement, and pledged themselves mutually to its observance, in the year 1727, and thus formed the first stock of the present society of United Brethren. Count Zinzendorf was justly, in some measure, considered the founder of the society, to which he thenceforward devoted his whole life, property and energy It will be readily conceived, however, more especially after observing that further emigrations from Bohemia and Moravia were checked by the Saxon government at an early period, that the descendants of the first emigrants, at this day, constitute but a small proportion of the present society. Individuals from all Protestant denominations, coinciding in the fundamental doctrines of Christianity common to all, and professing a desire to lead a truly Christian life, as members of such a community, under its peculiar regulations, were, from the beginning, admitted among them, without renouncing their original church and creed. On the contrary, to facilitate the maintenance of their connexion with their original churches, the society expressly includes three different tropes or modifications within its pale, the Lutheran, the Reformed and the Moravian, which latter comprises all other Protestant denominations. Experience has taught, that these differences, among persons so intimately associated, vanish of themselves to such a degree, that the original idea of these tropes is now maintained only as an evidence of the principle of their union, while its practical consequences have become altogether imperceptible. The United Brethren, however, continue strenuously to object to being considered a separate sect or denomination, because their union is exclusively founded on general Christian doctrines, and their peculiarities relate solely to their social organization, which is intended only to facilitate their joint purpose of putting truly Christian principles of life and conduct into actual practice. They consequently admit of no peculiar articles of faith, confining themselves altogether to regulations of conduct and discipline. As a body, they have at all times, when required by governments to point out their creed, professed general adherence to the Confession of Augsburg, as most congenial to the views of a majority; and, although they do not pledge their ministers to an express adoption of its articles, it is agreed among them not to insist upon any doctrines utterly repugnant thereto. They avoid discussions respecting the speculative truths of religion, and insist upon individual experience of the practical efficacy of the gospel, in producing a real change of sentiment and conduct, as the only essentials in religion. They consider the manifestation of God in Christ as intended to be the most beneficial revelation of the Deity to the human race; and, in consequence, they make the life, merits, acts, words, sufferings and death of the Savior the principal theme of their doctrine, while they carefully avoid entering into any theoretical disquisitions on the mysterious essence of the Godhead, simply adhering to the words of Scripture. Admitting the sacred Scriptures as the only source of divine revelation, they nevertheless believe, that the Spirit of God continues to lead those who believe in Christ into all further truth, not by revealing new doctrines, but by teaching those who sincerely desire to learn, daily better to understand and apply the truths which the Scriptures contain. They believe, that, to live agreeably to the gospel, it is essential to aim, in all things, to fulfil the will of God. Even in their temporal concerns, they endeavor to ascertain the will of God: they do not, indeed, expect some miraculous manifestation of his will, but only endeavor to test the purity of their purposes by the light of the divine word. Nothing of consequence is done by them, as a society, until such an examination has taken place; and, in cases of difficulty, the question is decided by lot, to avoid the undue preponderance of influential men, and in the humble hope that God will guide them right by its decision, where their limited understanding fails them. In former times, the marriages of the members of the society were, in some respects, regarded as a concern of the society, as it was part of their social agreement, that none should take place without the approval of the elders; and the elders' consent or refusal was usually determined by lot. But this custom was at length abandoned; and nothing is now requisite to obtain the consent of the elders, but propriety of conduct in the parties. They consider none of their peculiar regulations essential, but all liable to be altered or abandoned, whenever it is found necessary, in order better to attain their great object—the promotion of piety. Such alterations are effected through the medium of their synods. The society early undertook to propagate the gospel among heathen nations. The success of their attempts in this respect is generally known, and a great proportion of their energy is at this day devoted to this object. In the prosecution thereof, circumstances occurred, which, combined with the increase of its numbers, and certain difficulties in their way at Herrnhut, induced the society to plant colonies, on the plan of the mother society there, in different parts of Germany, England, Holland, America, &c., all of which, together, now constitute the *Unity of the Brethren*. Each individual colony, called a *place congregation*, is independent in its individual concerns, under the superintendence, however, of the board of general directors of the Unity; which superintendence, in England and America, is administered by subordinate local boards, in respect to all things not of a general nature; but they are responsible to the general board of the directors, at present situated at Berthelsdorf, near Herrnhut, and denominated the *board of elders of the Unity*. The appointments of all the ministers and officers of each community rest exclusively with this board. In England and America, however, these are committed to the local boards. To them is further committed the direction of all general objects of the whole society, such as their heathen missions, the support of superannuated ministers and their widows, and the education of the children of such of these as are without means of their own. For, as the principles and circumstances of the society prevent them from allotting a greater salary to any officers than their decent maintenance requires, those among them who are not possessed of fortunes, cannot lay by any thing for their old age, or for the education of their children: the charge of these, therefore, devolves upon the whole society

The economical affairs of each individual community are administered by one of the elders of that particular community, with the concurrence of a committee elected biennially from among the inhabitants, generally by the votes of all male members, or by an intermediate body thus elected. The objects for which each community has thus to provide, are, the erection and maintenance of a church, the support of the active ministers and other officers, of proper schools, and all other things necessary for the well-being of the community and the preservation of good order, while the individuals composing it are as entirely independent in their private property as any other persons whatever; each carrying on his particular business, for his own profit, and upon his own responsibility. A contrary impression, viz. that there exists a community of goods among them, is still very prevalent, especially in America. This is attributable to the fact, that, when their colonies in America were commenced, it was for some years found necessary to combine the efforts of all the members, in order to maintain themselves amid their difficulties; and, although each individual retained the absolute disposal of any property, before his own, their joint earnings, for the time, went into a common stock, from which their daily necessities were supplied. This unnatural state of things, however, continued no longer than it was imperiously necessary. Many other erroneous conceptions have become prevalent, concerning the economical concerns of this society. The original members of it had nothing to depend on but their industry. Count Zinzendorf and some of his nearest connexions sacrificed the whole of their estates in the various undertakings, missions and colonies. As the society grew, numbers of wealthy members afforded liberal aid; but the society never had any actual funds, upon which they could depend. Individual members borrowed the necessary sums, upon their own credit. These funds were invested, partly in commercial undertakings, partly in landed estates, and various manufactures, and the profits applied to pay the expenses of the society. Upon the death of count Zinzendorf, it was found that a debt had accrued, greatly exceeding the value of all the available investments. A separation of interests now took place. Each individual community assumed a proportionable share of the assets and debt, and thenceforward undertook the management of its individual concerns, and to provide for its own necessities by means of an institution, operating very much in the manner of a savings' bank, termed the *diacony* of each community. Moneys were taken up, under the special superintendence of the elders and of the committee above mentioned, and invested: the proceeds went to defray the disbursements of that particular community: the understanding was, that if the avails were such as to leave any thing to be disposed of after defraying their own expenses, such surplus was to go to aid other communities, whose means might not be so ample, or to assist the general concerns. Thus, in most communities of the United Brethren, certain trades or manufactures are carried on for their benefit, as such. By these means, together with the voluntary annual subscriptions of the members towards the maintenance of the ministers, and the support of the church and schools, the necessary funds are raised for defraying the charges on the particular communities, and for certain proportionate contributions, which each is expected to furnish to that fund of the Unity which is established for the support of superannuated ministers, and other officers, and their widows, as well as for the education of their children. The funds required, in each community, for the purposes of police and convenience, are raised by regular taxes on the householders, assessed by the committee before mentioned. The rest of the assets on hand, at the death of count Zinzendorf, were put under the control of a special board, forming one department of the board of elders of the Unity, and the proceeds applied to discharge the debt before mentioned. The disbursements required by the missions among the heathen are supplied by voluntary contributions. The greater part of the annual amount at the present time is furnished by persons not connected with the society. Some few of the West India missions are in part supported by the industry of the missionaries, and those in Labrador by a commercial establishment trading thither under the guidance of a society established at London. In the U. States there is a society for propagating the gospel among the heathen, incorporated by several states, and consisting of members of the United Brethren's church. This society has recently acquired large funds by the bequest of one of its members. All these resources flow into the common missionary fund, which is administered, and the missionary concern in general managed, by another department of the board of elders of the Unity, called the *missionary depart-*

ment. (See the article *Missions.*) A third department of this board is termed the *department of education.* This has charge, not only of the subject of the education of children throughout the society generally, but, in an especial manner, of those who are educated at the public expense. In many of the communities of United Brethren in Germany, England and America, boarding schools, for the education of young persons of both sexes, are established, in which not only their own youth, but a great number of others, are instructed in useful sciences and polite acquirements. For many years, these schools have sustained, and still maintain, a considerable reputation both in Europe and America. At Niesky, in Upper Lusatia, the Unity maintains a higher classical institution, where those receive a preparatory education who intend to embrace the liberal professions, or be prepared for the ministry. The latter complete their studies in a college situated at Gnadenfeld, in Silesia, which serves the purposes of a university. Similar institutions, upon a smaller scale, are established at Fulnec for the English, and at Nazareth for the American portion of the Unity. These are, properly speaking, theological seminaries only. Young men desirous of devoting themselves to the medical or other learned professions, resort, of course, to the public universities of their respective countries. In the three departments of the board of elders of the Unity before alluded to, taken collectively, the direction of the whole Unity is concentrated. This board, however, is responsible to the synods of the society, which meet at stated times, generally at intervals of from seven to twelve years, and from whom all its authority emanates. They are composed of the bishops and civil seniors of the church, certain other general officers of the society, such as the members of the board of elders of the Unity for the time being, and of the representatives chosen by each individual community. At these meetings, a revision of all the concerns of the society and its parts takes place, and such alterations are adopted as circumstances seem to require. They are terminated by the appointment of a new board of elders of the Unity.

The following is a sketch of the mode of life of the United Brethren, where they form separate communities, which, however, is not always the case; for, in many instances, societies belonging to the Unity are situated in larger and smaller cities and towns, intermingled with the rest of the inhabitants, in which cases their peculiar regulations are, of course, out of the question. In their separate communities, they do not allow the permanent residence of any persons as householders who are not members in full communion, and who have not signed the written instrument of brotherly agreement, upon which their constitution and discipline rests; but they freely admit of the temporary residence among them of such other persons as are willing to conform to their external regulations. According to these, all kinds of amusements considered dangerous to strict morality are forbidden, as balls, dancing, plays, gambling of any kind, and all promiscuous assemblies of the youth of both sexes. These, however, are not debarred from forming, under proper advice and parental superintendence, that acquaintance which their future matrimonial connexions may require. In the communities on the European continent, whither, to this day, numbers of young persons of both sexes resort in order to become members of the society from motives of piety and a desire to prepare themselves to become missionaries among the heathen, and where, moreover, the difficulties of supporting a family greatly limit the number of marriages, a stricter attention to this point becomes necessary. On this account, the unmarried men and boys, not belonging to the families of the community, reside together, under the care of an elder of their own class, in a building called the *single brethren's house,* where usually divers trades and manufactures are carried on, for the benefit of the house or of the community, and which, at the same time, furnishes a cheap and convenient place for the board and lodging of those who are employed as journeymen, apprentices, or otherwise, in the families constituting the community. Particular daily opportunities of edification are there afforded them; and such a house is the place of resort where the young men and boys of the families spend their leisure time, it being a general rule, that every member of the society shall devote himself to some useful occupation. A similar house under the guidance of a female superintendent, and under similar regulations, is called the *single sisters' house,* and is the common dwelling place of all unmarried females, not members of any family, or not employed as servants in the families of the community. Even these regard the sisters' house as their principal place of association at leisure hours. Industrious habits are here inculcated in the same way. In the communities of the United Brethren in America, the facilities of supporting families, and the consequent early marriages, have superseded the necessity of single brethren's houses; but they all have sisters' houses of the above description, which afford a comfortable asylum to aged unmarried females, while they furnish an opportunity of attending to the further education and improvement of the female youth after they have left school. In the larger communities, similar houses afford the same advantages to such widows as desire to live retired, and are called *widows' houses*. The individuals residing in these establishments pay a small rent, by which, and by the sums paid for their board, the expenses of these houses are defrayed, assisted occasionally by the profits on the sale of ornamental needlework, &c., on which some of the inmates subsist. The aged and needy are supported by the same means. Each division of sex and station just alluded to—viz. widows, single men and youths, single women and girls past the age of childhood—is placed under the special guidance of elders of their own description, whose province it is to assist them with good advice and admonition, and to attend, as much as may be, to the spiritual and temporal welfare of each individual. The children of each sex are under the immediate care of the superintendent of the single choirs, as these divisions are termed. Their instruction in religion, and in all the necessary branches of human knowledge, in good schools, carried on separately for each sex, is under the special superintendence of the stated minister of each community, and of the board of elders. Similar special elders are charged to attend to the spiritual welfare of the married people. All these elders, of both sexes, together with the stated minister, to whom the preaching of the gospel is chiefly committed (although all other elders who may be qualified participate therein), and with the persons to whom the economical concerns of the community are intrusted, form together the board of elders, in which rests the government of the community, with the concurrence of the committee elected by the inhabitants for all temporal concerns. This committee superintends the observance of all regulations, has charge of the police, and decides differences between individuals. Matters of a general nature are submitted to a meeting of the whole community, consisting either of all male members of age, or of an intermediate body elected by them. Public meetings are held every evening in the week. Some of these are devoted to the reading of portions of Scripture, others to the communication of accounts from the missionary stations, and others to the singing of hymns or selected verses. On Sunday mornings, the church litany is publicly read, and sermons are delivered to the congregation, which, in many places, is the case likewise in the afternoon. In the evening, discourses are delivered, in which the texts for that day are explained and brought home to the particular circumstances of the community. Besides these regular means of edification, the festival days of the Christian church, such as Easter, Pentecost, Christmas, &c., are commemorated in a special manner, as well as some days of peculiar interest in the history of the society. A solemn church music constitutes a prominent feature of their means of edification, music in general being a favorite employment of the leisure of many. On particular occasions, and before the congregation meets to partake of the Lord's supper, they assemble expressly to listen to instrumental vocal music interspersed with hymns, in which the whole congregation joins, while they partake together of a cup of coffee, tea or chocolate, and light cakes, in token of fellowship and brotherly union. This solemnity is called a *love-feast*, and is in imitation of the custom of the agapæ in the primitive Christian churches. The Lord's supper is celebrated at stated intervals, generally by all communicant members together, under very solemn but simple rites. Easter morning is devoted to a solemnity of a peculiar kind. At sunrise, the congregation assembles in the grave-yard; a service, accompanied by music, is celebrated, expressive of the joyful hopes of immortality and resurrection, and a solemn commemoration is made of all who have, in the course of the last year, departed this life from among them, and "gone home to the Lord"—an expression they often use to designate death. Considering the termination of the present life no evil, but the entrance upon an eternal state of bliss to the sincere disciples of Christ, they desire to divest this event of all its terrors. The decease of every individual is announced to the community by solemn music from a band of instruments. Outward appearances of mourning are discountenanced. The whole congregation follows the bier to the grave-yard (which is commonly laid out as a garden), accompanied by a band, playing the tunes of well-known verses, which express the hopes of eternal life and resurrection; and the corpse is deposited in the simple grave during the funeral service. The preservation of the purity of the community is intrusted to the board of elders and its different members, who are to give instruction and admonition to those under their care, and make a discreet use of the established church discipline. In cases of immoral conduct, or flagrant disregard of the regulations of the society, this discipline is resorted to. If expostulations are not successful, offenders are for a time restrained from participating in the holy communion, or called before the committee. For pertinacious bad conduct, or flagrant excesses, the culpable individual is dismissed from the society. The ecclesiastical church officers, generally speaking, are the bishops, through whom the regular succession of ordination, transmitted to the United Brethren through the ancient church of the Bohemian and Moravian Brethren, is preserved, and who alone are authorized to ordain ministers, but possess no authority in the government of the church, except such as they derive from some other office, being most frequently the presidents of some board of elders; the civil seniors, to whom, in subordination to the board of elders of the Unity, belongs the management of the external relations of the society; the presbyters, or ordained stated ministers of the communities, and the deacons. The degree of deacon is the first bestowed upon young ministers and missionaries, by which they are authorized to administer the sacraments. Females, although elders among their own sex, are never ordained; nor have they a vote in the deliberations of the board of elders, which they attend for the sake of information only.—It now remains to give some account of the numbers and extension of this society, which are often strangely exaggerated. On the continent of Europe, together with Great Britain, the number of persons living in their different communities, or formed into societies closely connected with the Unity, does not exceed thirteen or fourteen thousand, including children. Their number in the U. States of America falls something short of four thousand souls. Besides these, there are about three times this number of persons dispersed through Germany, Livonia, &c., who are occasionally visited by brethren, and strengthened in their religious convictions, while they have no external connexion with the Unity. These cannot be considered members of the society, though they maintain a spiritual connexion with it. The number of converts from heathen nations, as regularly reported at the last synod, in the year 1825, though larger than at any previous time, did not exceed 34,000 souls, comprehending all those who are in any way under the care of the missionaries. Indeed, it never was the object of the society to attempt the Christianization of whole nations or tribes, as such must be a mere nominal conversion. They profess to admit those only to the rite of baptism who give evidence of their faith by the change wrought in their life and conduct. On this account, they have every where introduced among their heathen converts a discipline similar to their own, as far as circumstances permit. It would be preposterous to conceive that the peculiar views, and the regulations of a society such as that of the United Brethren, could ever be adopted by any large body of men. They are exclusively calculated for small communities. Any one desirous of separating from the society meets with no hinderance. The following is a succinct view of the principal establishments of the society:—In the U. States, they have separate communities at Bethlehem, Nazareth and Litiz in Pennsylvania, and at Salem in North Carolina. Bethlehem is, next to the mother community at Herrnhut, in Germany, their largest establishment. Besides these, there are congregations at Newport in Rhode Island, at New York, at Philadelphia, Lancaster and Yorktown, at Graceham in Maryland; and several country congregations are scattered through Pennsylvania, the members of which chiefly dwell on their plantations, but have a common place of worship. There are four of this description in North Carolina, in the vicinity of Salem. In England, their chief settlements are Fulnec in Yorkshire, Fairfield in Lancashire, Ockbrook in Derbyshire: congregations exist likewise in London, Bedford, Bristol, Bath, Plymouth, Haverfordwest, together with a number of country congregations in divers villages. In Ireland, they have a considerable community at Gracehill, in the county of Antrim, and small congregations at Dublin, Gracefield and Ballinderry. On the continent of Europe, Herrnhut, Niesky and Kleinwelke in Upper Lusatia, Gnadenfrew, Gnadenberg, Gnadenfeld and Neusaltz in Silesia, Ebensdorf, near Lobenstein, Neudietendorf in the duchy of Gosna, Königsfeld in that of Baden, Neuwied on the Rhine, Christiansfeld in Holstein, Zeyst, near Utrecht, in Holland, and Sarepta, on the confines of Asiatic Russia, are the names of their separate communities; besides which there are organized societies at Berlin, Rixdorf, Potsdam, Königsberg, Norden in Friesland, Copenhagen, Altona, Stockholm, Gottenburg, St. Petersburg and Moscow. Their principal missions among the heathen, at this time, are the following:—among the negro slaves in the three Danish West India islands; in Jamaica, St. Kitts, Antigua, Barbadoes, Tobago, and in Surinam, among the same description of persons; in Greenland, among the natives of that desolate region; in Labrador, among the Esquimaux; at the cape of Good Hope, among the Hottentots and Caffres; and in North America, among the Delaware Indians in Canada, and the Cherokees in Georgia. It is a general principle of the society, that their social organization is in no case to interfere with their duties as citizens or subjects of governments under which they live, and wherever they are settled. They have always supported a good reputation, and been generally considered valuable members of the community, on account of the moral and industrious habits successfully inculcated by their system.

United Colonies of New England. (See *New England.*)

United Greeks are Christians who originally belonged to the Greek church, but whom the Roman church has united with her own members on certain conditions. They differ from the Greek church in believing that the Holy Ghost proceeds both from the Father and the Son, by believing also in the supremacy of the pope, in purgatory, and the efficacy of masses for souls, according to the doctrines of the Roman church. They have their own church government, and retain the old names of ecclesiastical dignities. Their priests wear beards and caps, and are allowed to marry. They retain the ancient rites, the Greek language during service, the strict Greek fasts, and the Lord's supper under both forms, in common with the old Greek church, because the Jesuit missionaries, who gradually effected their conversion in the seventeenth and eighteenth centuries could not induce them to make changes in these particulars. Such United Greeks are found in Italy, especially in Venice and Rome, in Naples and Sicily, in the eastern parts of the Austrian monarchy, also in Transylvania, Hungary, Croatia, Sclavonia, Dalmatia, &c., where many Greeks live, and in Eastern Poland. The number of the United Greeks is estimated at 2,000,000. The non-united Greeks in the above-mentioned countries, except in Italy, where there are none, acknowledge the patriarch of Constantinople as their spiritual head, and consider the United Greeks as apostates. (See *Greek Church.*)

United Provinces. (See *Netherlands.*)

United Provinces of South America. (See *Plata, United Provinces of the.*)

United States of North America. I. *History.* The history of the United States naturally divides itself into two periods, the first embracing the annals of the British North American colonies, which separated from the mother country in 1776; and the second, the history of the independent republic established by the victorious colonists.—1. *The Settlement and progressive Growth of the Colonies* (1607 to 1776) *during a Period of one hundred and seventy Years.* Of the thirteen colonies, whose delegates signed the Declaration of Independence, twelve were settled in the seventeenth century,* and the colonists, with a few trifling exceptions, were Englishmen. In 1630, the number of English colonists in North America did not exceed 4000; in 1660, it was not less than 80,000, and had therefore increased twenty-fold in the short space of thirty years: in 1701, the population of the colonies is estimated to

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* *Dates of the Settlement of the Colonies.*

Virginia, 1607.
New York, by the Dutch, 1614; occupied by the English, 1664.
Plymouth, 1620; incorporated with Massachusetts in 1692.
Massachusetts, 1628.
New Hampshire, 1623.
New Jersey, by the Dutch, 1624; occupied by the English in 1664.
Delaware, by the Dutch, 1627; occupied by the English in 1664. Some Swedes settled here in 1638, but they were conquered by the Dutch, and most of them left the country.
Maine, 1630; united with Massachusetts in 1677.
Maryland, 1633.
Connecticut, 1635; settled from Massachusetts.
New Haven, 1637; united with Connecticut in 1662.
Providence, 1635; } united 1644.
Rhode Island, 1638; }
North Carolina, 1650; a distinct colony in 1729.
South Carolina, 1670.
Pennsylvania, 1682.
Georgia, 1733.

have been about 262,000. The period of colonization was, one of great intellectual and political excitement in the mother country; in which a nation that had for a long time enjoyed free and popular institutions, was engaged in defending them against the encroachments of the crown, and in extending and securing them by new bulwarks. The principles of liberty, the rights of man, particularly of Englishmen, the nature, use and objects of government, were topics of general interest and discussion in England, and republican maxims were warmly embraced by many. It is an observation of Fox, "that from 1588 to 1640 was a period of almost uninterrupted tranquillity and peace: the general improvement in all the arts of civil life, and, above all, the astonishing progress of literature, are the most striking among the general features of that period, and are in themselves causes sufficient to produce effects of the utmost importance. A country whose language was enriched by the works of Hooker, Raleigh and Bacon, could not but experience a sensible change in its manners and in its style of thinking; and even to speak the same language in which Spenser and Shakspeare had written, seemed a sufficient plea to rescue the commons of England from the appellation of *brutes*, with which Henry VIII had addressed them." The same commons were, in fact, peevishly designated by James I as *kings*;* and such was the progress of the people of England in wealth, as well as in cultivation, that, according to Hume, the house of commons, in 1628, was three times as rich as the house of lords. Another remarkable element in the society from which swarmed the American colonists, was the state of religion. An imperfect reformation, favored by the government, and amounting to little more than a secession from the Catholic church, was accompanied by a popular reformation, ready to follow out its principles to their results. The state religion derived its force and its rights from the crown; the church, therefore, became the champion of passive obedience and divine right, and the *Puritans*, as they were reproachfully called, or Non-conformists, were compelled to attack the temporal power, and to defend civil liberty, while assailing the intolerance of the church and defending freedom of conscience. This mixture of religious faith in the contest for political rights, gave the English Puritans the zeal, firmness and boldness of religious reformers. (See *Puritans*.) It is further to be considered, that, while the English colonists brought with them to America the broadest and most generous principles of liberty, and those free institutions which convert general maxims into practical truths, and make them a part of the daily life of men, they left behind them those restraints which in some degree checked their free action in England. They brought the jury and the right of representation, but left behind them the chains which the church and court were endeavoring to fasten upon their countrymen: feudal services, privileged orders, corporations and guilds, with other similar burdens upon industry, and insults upon honest merit, found no place in the western forests; but civilization, arts and letters, without the corruption and gross licentiousness which characterized the reigns of James I and Charles II, were brought hither in the train of liberty. The next important element in the colonial history, is the political institutions established in the colonies. In 1606, two companies of merchants and others were incorporated, under the names of the *London company* and the *Plymouth company*, with the exclusive right of settling and trading within their respective limits. The former began the colonization of British America, in 1607, by sending to Virginia a feeble colony of 100 men, which, before the end of the year, was reduced, by suffering and the badness and scarcity of food, to thirty-eight. In October, 1609, the number had been increased by new colonists to 500: a famine reduced them in six months to sixty persons. In 1613, land was distributed to each individual, both the land and the produce having before been held in common. In 1619, the first colonial assembly was convoked, consisting of representatives elected by the boroughs, the concerns of the colony having been previously managed by the company in England. As the colonists were mostly adventurers without families, ninety young girls were sent over by the company in 1620, and sold to the young planters, at the rate of 100—150 pounds of tobacco. In 1621, the company passed an ordinance vesting the government of the colony in a governor, council and general assembly, the latter chosen by the inhabitants, with power to enact laws.

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* When informed of the approach of a committee of the house of commons, he ordered twelve chairs to be brought; "for," said he, "there are twelve kings a-coming."

In 1622, 347 men, women and children were massacred by the Indians; a general Indian war followed, and the settlements were reduced from eighty to eight. In 1624, the company was dissolved by the crown, and the colony taken into the hands of the king. Such are a few incidents from the humble annals of the first colonists, presenting a picture of suffering too often renewed in other parts of the country.—The Plymouth company, to which was granted the exclusive right to trade and settle in North Virginia, did nothing effectual towards the colonization of their jurisdiction. But, in 1620, a number of Puritans (Brownists), who had set sail for Virginia, were landed, either by accident or treachery, within the limits of the Plymouth company. Ten years afterwards, they obtained from the company a grant of the land to which they had previously no title but occupancy; but they were never incorporated as a body politic by royal charter, and they therefore remained a mere voluntary association, yielding obedience to laws and magistrates formed and chosen by themselves, until their union with Massachusetts, in 1692.* But the germ of the New England colonies was the Massachusetts colony, settled, in 1628, by a company incorporated that year by royal charter, the land having been previously purchased from the Plymouth company. The government of the colony was transferred to Massachusetts, in 1630, by vote of the company; and, a few years later, the freemen adopted the plan of acting by delegates or representatives: courts were also established, and the charter of a trading company was thus tacitly converted into the constitution of a commonwealth. The Massachusetts colonists were Puritans, and were rendered not less obnoxious to the court party at home by their religious principles, than by this unwarranted assumption of political power. This, with other circumstances, led the Plymouth company to resign their charter to the king (1635), and Massachusetts, like Virginia, was thus taken into the royal hands. Such, however, was the disturbed state of England at the time, that these remote and insignificant colonies attracted little attention, and were therefore left to grow up in habits of self-government, with little restraint, while their numbers and wealth were increased by successive emigrations of the parties worsted in the civil strife at home. The persecuted Puritans fled to New England; the oppressed Catholics to Maryland; the defeated cavaliers or royalists to Virginia. Such were some of the events of the earliest periods of colonial history.—It would lead us beyond our limits to attempt even a sketch of the annals of the colonies. We must satisfy ourselves with a hasty view of the forms of government which prevailed in them, and which served as the elements of the political system established rather than introduced by the revolution. Of these forms of government there were three—the royal, the charter, and the proprietary governments. 1. The charter governments were confined to New England. The people of these colonies, by the express words of their charters, were entitled to the privileges of natural born subjects, and invested with the powers of government, legislative, executive and judicial. They chose their own governors, elected legislative assemblies, and established courts of justice, and in many points even exceeded the powers conferred by the charters. The only limitation to their legislative power was, that their laws should not be contrary to those of England. The crown claimed, indeed, the right of revoking these charters; but the colonists maintained that they were solemn compacts, irrevocable unless for cause. The charters were sometimes declared forfeited, or forcibly taken away (particularly towards the close of Charles II's reign, when the corporations in England shared the same fate); and the disputes to which this question gave rise, between the mother country and the charter colonies, were one of the causes of the revolution.—2. The royal governments were those of Virginia, New York, and, at a later period, the Carolinas (1728) and the Jerseys (1702). In these colonies, the governor and council were appointed by the crown, and the colonists chose representatives to the colonial assemblies. The governors were commissioned by the crown, and acted in obedience to instructions received from the same. They had a negative on the proceedings of the legislatures, which were composed of the councils and the popular assemblies: the judges and most of the officers were also appointed by the king, although, in many cases, paid by the colony. The sources of discontent in these colonies were the arbitrary acts of the governors, and the royal claim to an absolute veto on the acts of the assemblies, which would have virtually abolished the right of the people to participate in the government.—3. The proprietary governments were those of Maryland, Pennsylvania, and at first the Carolinas and the Jerseys: the two former remained such till the revolution. These colonies were in the hands of proprietors or individuals, to whom grants of land had been made by the crown, with authority to establish civil governments, and make laws, under certain restrictions in favor of the crown. The history of the proprietary governments is little more than that of a perpetual quarrel between the people and the proprietors, chiefly owing to the manner in which the latter exercised their prerogative of repealing or negativing the acts of the colonial assemblies; for, even in these colonies, representative bodies, partly elected by the freemen, and partly summoned by the proprietors, were soon introduced. In 1719, the people of Carolina had become so exasperated against the proprietors, that they took the government into their own hands, and elected a governor and council, and assembly, which published a declaration of independence, setting forth the causes of their renunciation of the former government, and signed by all the members of the new one. The oldest laws of the Virginia assembly (1624) comprise a declaration defining the power of the governor and the assembly, and asserting the privileges of the people in regard to taxes and personal services. At an early period in the existence of the New England colonies (1643), a confederation was established between them for mutual offence and defence, leaving to each colony its own peculiar jurisdiction and government, the common affairs of the confederacy being managed by a congress, consisting of two commissioners from each colony. These three measures, emanating the first from a proprietary, the second from a royal, and the third from a charter colony, show that a common spirit pervaded them all; and they may be considered as the prototypes of the bill of rights, the declaration of independence, and the general confederacy, in which all joined at a later period. Besides the subjects of charters in one set of colonies, and of representation in another, the question of taxation was a matter of common interest. "There is something curious," says Fox (*History of James II, Introduction*), "in discovering that even at this early period (1685) a question relative to North American liberty, and even to North American taxation, was considered as the test of principles friendly or adverse to arbitrary power at home. But the truth is, that, among the several controversies which have arisen, there is no other where the natural rights of man, on the one hand, and the authority of artificial institutions, on the other, as applied respectively by the whigs and tories to the English constitution, are so fairly put in issue, nor by which the line of separation between the two parties is so strongly and distinctly marked." The *common English right of assent to taxes*, as the colonists themselves called it, was asserted in the fullest manner by nearly all the colonies, as early as the middle of the seventeenth century; and it was a commonly received opinion in America, from that period, that the authority of parliament in the colonies did not extend to taxation or internal legislation, but was confined to the regulation of trade. Restrictions on trade and manufactures were also a cause of vexation and ill-blood in the colonies. For a long time they enjoyed almost unlimited freedom of commerce; and it was not until they had surmounted the hardships and difficulties incident to their first establishment, and had begun to increase rapidly in wealth, that their commerce began to be submitted to restrictions calculated to secure all its benefits to the mother country. The act of 1651 confined the export and import trade of the colonies exclusively to British or colonial vessels, and the navigation act of 1660 enacted that certain specified articles (*enumerated articles*) should not be exported directly from the colonies to any foreign country. Besides compelling the colonists to sell their produce exclusively in the English markets, it was next provided (1663) that they should buy such foreign articles as they stood in need of entirely of the merchants and manufacturers in England. In 1672, certain colonial products transported from one colony to another were subjected to duties. It was further a principle of the colonial policy of England, to discourage all attempts to manufacture such articles in the colonies as could be provided for them by the mother country. In 1699, it was enacted, that no wool, yarn, or woollen manufactures, should be exported from the American colonies; and, in 1750, every slitting or rolling mill, plating forge to work with a tilt-hammer, &c., was declared a common nuisance, which the governors were directed to cause to be abated. It is true, however, that many of these and similar acts of parliament were openly disobeyed or secretly evaded by the colonists.—Such were some of the features of the colonial policy of the mother country, and the causes of irritation and discontent in the colonies: impositions, requisitions and restrictions on one side, were met by petitions, remonstrances and open resistance on the other. "The colonies," said lord Clarendon, at an early period, "are already hardened into republics." In time of peace, each colony defrayed the expenses of its civil establishment; and the money for this purpose was raised by taxes assessed by themselves in such way as they thought proper. In time of war, the crown made requisitions of men and money, and apportioned them among the colonies in the ratio of their wealth and population, or with reference to their proximity to the scene of war: the troops were fed, clothed and paid by the colony raising them. Thus, in the two French wars, 1744—1748, and 1755—1763, the colonists, who were deeply interested on account of the increasing strength and encroachments of the French settlements on their borders, took an active part, and often had more troops in the field than were required of them: in the latter war, they raised 25,000 men, and the colonial forces favorably distinguished themselves on several occasions. The various Indian wars which prevailed at intervals all along the extensive and exposed line of frontiers, were in general conducted by the colonists themselves. Measures had been taken at an early period, in some of the colonies, for providing for the general education of the people. Primary schools were first established in New England, and it early became a favorite object, in that part of the country, to enable every individual to read and write. Free schools were instituted in Boston in 1635, and, in 1647, the legislature of Massachusetts passed an act requiring every township with fifty families to provide a school where children might be taught to read and write, and every township with 100 families to provide a grammar school. Colleges were also founded for the higher education of youth; and, at the beginning of the revolutionary war, there were eight institutions of this kind in the country—Harvard college (founded 1638), Massachusetts; William and Mary (1693), Virginia; Yale (1700), Connecticut; Princeton (1738), New Jersey; King's (now Columbia), New York, 1754; Providence (1764), Rhode Island; Dartmouth (1770), New Hampshire; and Hampden and Sidney college (1774), Virginia. The peace of Paris, in 1763, by annihilating the French power in North America, relieved the colonies from the pressure of foreign hostilities. But a course of policy was now adopted by the British ministry, which finally led to the separation of the American colonies from the British empire. Like all other points of the English constitution, the precise limits of royal and parliamentary authority over the colonies had remained unsettled. Many of the acts regulating the trade of the colonies, had been submitted to with reluctance, as violations of their rights, or secretly evaded or openly disregarded; but measures were now taken by the ministry, not only rigidly to enforce such acts, but to raise a revenue in America by internal taxation; and, as a part of this scheme, modifications in the colonial governments, calculated to render them more dependent on the crown, were also contemplated.* In 1764, an act of parliament was passed, continuing the duties on certain articles imported into the colonies, towards raising a revenue; and it was provided that all penalties for breach of the acts of trade and revenue committed in America might be recovered in any vice-admiralty court in the colonies. In 1765 (March 22) the stamp act was passed; and soon after a bill was brought in authorizing the quartering of troops in the colonies. These acts and measures were received in America with universal opposition; and a general congress of the colonies

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* As this instance of the formation of a society which actually exercised the power of life and death is, perhaps, unique in history, we have thought it worth while to give the document itself. "In the name of God—we, whose names are underwritten, do, solemnly and mutually, in the presence of God and one another, covenant and combine ourselves together into a civil body politic, by virtue hereof to enact, constitute and frame such just and equal laws, ordinances, acts, constitutions and offices, as shall be thought most meet and convenient for the general good of the colony, unto which we promise all due subjection and obedience."

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* A scheme for taxing the colonies was proposed to sir R. Walpole. "I will leave that," said he, "for some of my successors who may have more courage than I have, and be less a friend to commerce than I am. It has been a maxim with me, during my administration, to encourage the trade of the American colonies in the utmost latitude. Nay, it has been necessary to pass over some irregularities in their trade with Europe; for, by encouraging them to an extensive growing foreign commerce, if they gain £500,000, I am convinced that, in two years afterwards, full £250,000 of their gains will be in his majesty's exchequer, by the labor and product of this kingdom. This is taxing them more agreeably to their constitution and ours."

(the first of the kind) was held at New York, which adopted a declaration of rights and grievances, asserting taxation by themselves, and trial by jury, to be the inherent rights of the British subjects in the colonies. The colonial assemblies adopted similar measures, and popular meetings throughout the country, heated essays in the newspapers, and more elaborate, but not less inflammatory, pamphlets,[*] served to set the whole country in a flame. In many places, the stamp officers and their supporters were exposed to personal violence; and, on the first of November, the day on which the act was to have taken effect, neither stamps nor officers were to be found in the colonies; business of all kinds was therefore transacted without the aid of stamped paper. In this state of affairs, the stamp act was repealed (March 18, 1766), and, at the same time, a declaratory act was passed, asserting the right of parliament to bind the colonies in all cases whatsoever. The Rockingham ministry, by which these measures were carried, was soon displaced; and, in June, 1767, the new chancellor of the exchequer brought in a bill imposing duties on glass, paper, pasteboard, white and red lead, painters' colors, and tea, imported into the colonies. This act, after increasing the exasperation of the colonists, particularly as troops were quartered in Boston to enforce obedience, and giving rise to combinations among the Americans against the importation of the articles specified, was also repealed (March 5, 1770), the duty on tea being alone continued. The colonists accordingly renounced the use of that article, or obtained it from foreign countries. In 1773, the ministry procured an act, permitting to the East India company a drawback on teas exported to America, for the purpose of rendering it cheaper in this country, and inducing the Americans to submit to the small duty imposed upon it. Large shipments were made; but in Philadelphia and New York, the vessels were not allowed to land their cargoes; in Charleston, it was put into stores, but not permitted to be offered for sale; and in Boston, where the British authorities refused to allow the vessels to return, without having been entered, the tea was thrown overboard. This act of violence was followed by the Boston port bill (March 31, 1774), interdicting all commercial intercourse with the town of Boston, and by a bill (May 20) for entirely subverting the government of Massachusetts.—See Quincy's *Observations on the Boston Port Bill* (1774, republished in his Life by his son).—In this crisis, the other colonies made common cause with Massachusetts, and, September 5, a general congress met at Philadelphia. Congress adopted a declaration of rights, asserting the exclusive power of legislation, in all cases of taxation and internal policy, to be in the provincial legislatures; with a statement of grievances, declaring the acts imposing duties for raising a revenue in America, extending the power of the admiralty courts, and depriving the Americans of trial by jury, authorizing the trial in England of persons charged with certain offences in America, shutting up the harbor of Boston, altering the government of Massachusetts, &c., to be infringements and violations of the rights of the colonists. They next proceeded to interrupt all commercial intercourse with Great Britain, by the non-importation, non-consumption and non-exportation agreement, binding themselves not to import, consume or export certain articles, until the acts complained of should be repealed. These proceedings had no effect to change the policy of the British government, and general preparations were now made in the colonies for resistance: gunpowder was manufactured, warlike stores collected, and the citizens began to arm. Massachusetts was declared to be in rebellion, and new restrictions were imposed upon the trade of the colonies. A detachment of troops sent from Boston to seize some provincial stores, collected at Concord, fired upon the citizens who assembled to oppose them, and actual hostilities were now commenced. (See *Lexington*.) The second congress, which met in May, 1775, immediately determined to organize an army, and Washington was appointed (June 15) commander-in-chief of the colonial forces. "We have counted the cost of this contest," said congress, in a declaration of July 6, "and are with one mind resolved to die freemen rather than to live slaves." July 4, 1776, congress adopted a declaration of independence.[†]

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[*] The most important productions to which this dispute gave rise, were Otis's Rights of the Colonies (1764); John Adams's Essay on the Canon and Feudal Law (1765); Bland's Enquiry into the Rights of the British Colonies (1766). The Farmer's Letters, by Dickinson, were written on the passage of the act of 1767.

[†] For the history of the colonies, we refer the reader to Hazard's State Papers (containing the colonial charters, and other early documents. 2 vols., 4to., 1792); Chalmers's Annals of the United Colonies (1st vol. to 1688, chiefly compiled from

2. *The History of the U. States from 1776 to 1832, a Period of fifty-six Years.* 1. *To the Adoption of the Federal Constitution in* 1789. The Declaration of Independence, after recapitulating those acts of the British government which were viewed as subversive of the liberties of the British subjects in America, declares the United Colonies to be free and independent states, absolved from all allegiance to the British crown, and all political connexion between them and the state of Great Britain to be totally dissolved. There is a striking parallel between the English revolution of 1688 and the North American revolution of 1776. In both cases, previous discussion had fairly put the disputed question in issue: each party to the dispute had fully weighed and settled its principles, its claims, and its duties: the people of England and the people of America were in both cases on the defensive; not aiming at establishing new rights, or setting up new pretensions against old established despotism, but defending against encroachment liberties which they had always enjoyed, and seeking new guarantees to secure them. Broken charters, insulted legislatures, and violated judiciaries, arbitrary acts defended by arbitrary principles, and injustice supported by violence, drove the English nation, in 1688, and the English colonies in 1776, to declare that the respective sovereigns had abdicated the government. The American revolution was complete in 1776, but it still remained to defend it by arms. The affairs of Lexington and Bunker hill (see *Charlestown*), the capture of several posts, and an unsuccessful expedition against Canada (see *Arnold*, and *Montgomery*), were among the acts of hostility which had preceded the declaration of independence. General Washington had been at Cambridge at the head of an army, whose term of service expired with the year (1775), without ammunition, and but imperfectly supplied with arms. By the beginning of March, 1776, 14,000 regular troops had been enlisted, and the British were obliged to evacuate Boston March 17. June 28, the British forces under sir Peter Parker had been repelled in an attack on Charleston. The military operations which closed the year were the capture of New York by the British forces under lord Howe and sir W. Howe (Sept. 15), after the defeat of the Americans on Long Island (Aug. 27), the battle of White Plains (Oct. 28), the retreat of the American forces through the Jerseys and across the Delaware (Nov. 28), the battle of Trenton (Dec. 26), and of Princeton (Jan. 3, 1777). The ensuing campaign of 1777 was more favorable to the American cause. General Howe had indeed taken possession of Philadelphia (Sept. 27), and the Americans had been defeated on the Brandywine (Sept. 11), and at Germantown (Oct. 4); but the northern army, under the command of general Gates, after some partial success, had compelled general Burgoyne to surrender his army at Saratoga (Oct. 17), and thus cut off the communication attempted to be kept up between New York and Canada. On the reception of this intelligence in Europe, the French government entered into treaties of amity and commerce with the U. States (Feb. 6, 1778), and thus recognised their existence as an independent nation. A complete history of the diplomatic transactions of this and the subsequent period will be found in the *Diplomatic Correspondence of the American Revolution, published by Order of Congress* (Boston, 1830, 12 vols., 8vo.). The British commander now came to the resolution to evacuate Philadelphia (June 18), and concentrate his forces at New York. While effecting this measure, his rear was attacked by general Washington at Monmouth (28th),

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documents, London, 1780); Burke's European Settlements in America (2 vols., 8vo., 1757); Marshall's History of the Colonies (printed separately, in 1824); Holmes's Annals of America (2d ed., 2 vols., 1829). For the disputes preceding the revolution, see the pamphlets already mentioned, with Franklin's Interest of Great Britain, &c. (1760); Jefferson's Summary of the Rights of British America (1774); J. Adams's History of the Disputes with America, from their Origin in 1754; Quincy's Life of Quincy; Wirt's Life of Henry; Tudor's Life of Otis; Lee's Lives of the Lees. The Massachusetts State Papers, from 1765 to 1775, and Hutchinson's History of Massachusetts, are also of general interest. The Annual Register (Dodsley's), of which the chief part of the earlier volumes was written by Burke, the volumes of the parliamentary history (Hansard's ed., 36 vols.) relating to the period, and Almon's Prior Documents, from 1764 to 1775 (1779), and Remembrancer (17 vols., 1775—84), are also valuable sources. Congress has recently made an appropriation for examining the papers in the English archives, relating to the colonies, with a view to procuring copies of them. The library of Harvard university contains nearly a complete collection of works relating to America. The library of Ebeling (q. v.), presented by the late Israel Thorndike of Boston, contains upwards of 3200 volumes, chiefly on American history, and 10,000 maps, charts and views. The original owner was fifty years in collecting it. Another collection, made by Mr. Warden, late American consul at Paris, and author of a valuable work on the U. States, was presented to the library by Samuel A. Eliot of Boston. This collection consists of about 1200 volumes, besides maps, prints and charts.

with partial success. About the same time, a French fleet arrived on the coast, having on board about 4000 French troops. Congress had hitherto consisted of an assembly of delegates from thirteen independent states, with little more authority than that of advising the states to adopt certain measures. Money was raised only by consent of the states: the congress had no power to enforce obedience, and the states were held together only by external pressure. It had been some time thought desirable that something should be done to give security and permanency to this loose union, and to define with precision the nature of the federal compact, the powers of congress, and the residuary sovereignty of the states. After long and embarrassing discussions, the articles of confederation were agreed upon by congress, Nov. 15, 1777, and submitted to the state legislatures for ratification. Most of the legislatures ratified them in the following year (they bear date July 6, 1778), but Delaware and Maryland did not accede to them till somewhat later. By these articles, the exclusive cognizance of foreign relations, the rights of war and peace, and the right to make requisitions of men and money, were confided to congress. But, like all former confederations, the decrees of the federal government operated upon the states in their sovereign capacity, and not upon the individual citizens; and as soon as danger from abroad was past, this confederacy was found to be utterly incompetent to govern the country. In 1779, the south became the principal theatre of warlike operations. The successful invasion of Georgia, in the preceding year, was followed by a war of depredation and ruin on the coasts, and a partisan warfare in the interior, which desolated the country, but led to no decisive results. This continued during the following year, in which Charleston was captured (May 12) by the British. The southern guerilla war carried on by the backwoodsmen of North and South Carolina and Virginia was murderous, but there was nothing which deserved the name of an army, capable of opposing the British forces, notwithstanding the exertions and brilliant services of Greene, Morgan, Sumter and Marion. In 1781, the contest was finally closed by the surrender of Cornwallis, at Yorktown, to the combined French and American forces under Washington and Rochambeau (Oct. 19). In the following year, a treaty was concluded between Holland and the U. States; and, after long-protracted negotiations, a definitive treaty of peace with Great Britain was signed Sept. 23, 1783. Denmark, Spain, Sweden and Russia had previously recognised the U. States as a sovereign power.* The war was attended with great sacrifices on the part of the Americans. Without arms, ammunition, or pecuniary resources, congress was obliged to have recourse to a paper medium. $300,000,000, in bills of credit, had been emitted during the five first years of the war, and no provisions were made for redeeming them, the states neglecting, or partially complying with, the requisitions of congress. In 1780, these bills had depreciated to such a degree as to cease to circulate; the treasury was empty, the army unpaid, without clothing, and often without food. At this time, the French government made a grant of 6,000,000 livres, by way of subsidy, and a further sum by way of loan; and finally a loan of 10,000,000 of livres was raised in Holland. These supplies, with a new organization of the finance department, and the establishment of a national bank, contributed to relieve the pressure. At the peace, the public debt was found to amount to $42,000,000, on which congress was unable to pay even the interest.† The requisitions and regulations of that body were little regarded by the states, and the country was already becoming a prey to anarchy, when a convention, composed of delegates from the several states, met at Philadelphia (May, 1787), for the purpose of revising the articles of confederation, and, under the presidency of Washington, agreed on a federal constitution (Sept. 17), to be proposed to the people in state conventions.—2. *From the Establishment of the Federal Government in* 1789.* At an early period of the war (1776), congress had recommended to the assemblies and conventions of the several colonies, to establish governments suited to the new exigencies of the country. This was not a difficult task, to a people who had always been accustomed, with a few exceptions, to manage their own affairs, and whose legislative and judicial institutions in some cases needed only a slight reform. The constitutions of the states were, in general, modelled on the same plan, having, in imitation of the British constitution, a legislative authority vested in two houses, one or both of which were chosen directly by the people; and an executive, with definite power, chosen by the people or by their representatives. These documents are the first written constitutions of government with which history makes us acquainted. (For a full account of them, see *Constitutions.*) These governments were all highly popular in their principles, simple in their machinery, and well calculated for the management of home affairs. But the general regulation of commerce on uniform prin-

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* For the history of the American revolution, the principal works, in addition to some of those previously mentioned, are Marshall's Life of Washington (5 vols., 8vo., and Atlas, Philadelphia, 1804; 2d ed., omitting the history of the colonies, 2 vols., 8vo., and Atlas, Philadelphia, 1832); Pitkin's Civil and Political History of the United States to 1797 (2 vols., 8vo., New Haven, 1828); Ramsay's History of the American Revolution (2 vols., 8vo., Philadelphia, 1789); Botta's *Storia della Guerra Americana* (English, 2d ed., 2 vols., 8vo., 1826); Stedman's History of the American War (2 vols., 4to., London, 1794); Gordon's History of the United States (4 vols., 8vo., London, 1788); Tarleton's Campaigns of 1780 and 1781 (4to., London, 1787); Moultrie's Memoirs; Drayton's Memoirs; Sparks's Life of Morris (3 vols., 8vo., Boston, 1832); Journals of the Continental Congress from 1774 to 1778 (13 vols.); and Secret Journals of Congress to the Dissolution of the Confederacy (4 vols., 8vo., 1821).

† 1. *Expense of the Revolutionary War.* As the commerce of the U. States was interrupted during the revolution, no revenue was raised from this branch of industry to sustain the great and pressing demands of the nation. Nor, indeed, had congress power to levy a general tax on commerce, this being the prerogative of the several states. The country itself, moreover, in the midst of an oppressive war, was not in a condition to contribute pecuniary aid to the general cause, and the necessary resort of congress was to loans and paper money. It is not possible to ascertain with certainty the expenses of the revolutionary war. An estimate was made in 1790,

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by the register of the treasury, and furnished to a committee of congress. The following general abstract will show the results :—

	Dolls.	90ths.
The estimated amount of the expenditures of 1775 and 1776 is, in specie,	20,064,666	66
1777	24,986,646	85
1778	24,289,438	26
1779	10,794,620	65
1780	3,000,000	00
1781	1,942,465	30
1782	3,632,745	85
1783	3,226,583	45
To Nov. 1st, 1784	548,525	63
Forming an amount total of treasury payment of	$92,485,693	15

The whole expense of the war is estimated, in specie, at $135,193,700.

2. *Emissions of Continental Money.* The advances made from the treasury were principally in a paper medium, which was called *continental money*, and which in a short time depreciated; the specie value of it is given in the foregoing estimate. The advances made at the treasury of the U. States in continental money, in old and new emissions, are estimated as follows, viz.

	Old Emission.		*New Emission.*	
	Dolls.	90ths.	Dolls.	90ths.
In 1776	20,064,666	66		
1777	26,426,333	1		
1778	66,965,269	34		
1779	149,703,856	77		
1780	82,908,320	47	891,236	80
1781	11,408,095	00	1,179,249	00
	$357,476,541	45	$2,070,485	80

By comparing this amount of paper money, issued during the revolution, with the above estimate of the total expense in specie dollars, it will be seen that the average depreciation of the whole amount issued was nearly two thirds of its original value.

3. *Loans and Grants of Money in France.* The following is a sketch of an account of the loans, subsidies and grants of money received in France during the revolution. The fractions of dollars are omitted. Five livres and eight sols are reckoned to the dollar.

	Livres.	*Dollars.*
1778, *February* 6.—Cash received from sundry individuals up to this day, including a loan from the farmers-general,	3,000,000	555,555
" Loan by the court of France for this year,	3,000,000	555,555
1779.—Loan for this year,	1,000,000	185,185
1780.—Loan,	4,000,000	740,740
1781.—Loan,	4,000,000	740,740
" Subsidy from the court of France,	6,000,000	1,111,111
" Loan granted by the court in Holland,	10,000,000	1,851,851
1782.—Loan,	6,000,000	1,111,111
1783.—Loan,	6,000,000	1,111,111
	43,000,000	7,962,959

4. *Troops employed.*

	Continental.	Militia.
1775	27,443	
1776	46,901	26,060
1777	34,750	10,112
1778	32,899	4,553
1779	27,699	2,429
1780	21,115	5,811
1781	13,832	7,398
1782	14,256	
1783	13,076	

* *Introduction of States into the Confederacy.* The thirteen United Colonies, which issued the declaration of independence, entered into the confederation of 1778, and formed the constitution of 1789, were, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, and Georgia. The states subsequently admitted into the union are,

Vermont, separated from New York, 1791;
Tennessee, from North Carolina, 1796;
Kentucky, from Virginia, 1799;
Ohio, formed from lands north-west of the Ohio, which had been ceded to the general government by the states to which it belonged, 1802;
Louisiana, from Louisiana purchase, 1812;
Indiana, from North-west Territory, 1816;
Mississippi, from Georgia cession, 1817;
Illinois, from North-west Territory, 1818;
Alabama, from Georgia cession, 1819;
Maine, separated from Massachusetts, 1820;
Missouri, set off from Louisiana purchase, 1820.

ciples, the management of the intercourse with foreign states, the support of a military peace establishment, the settlement of disputed questions between thirteen sovereign powers, required a general authority competent to decide these and similar questions. The convention of Philadelphia, after a session of about four months, finally adopted the present federal constitution of the U. States (Sept. 17, 1787), with the provision that the ratification of it by nine states should be sufficient for the final establishment of the new system. The plan thus submitted to the states was warmly debated in the several conventions, but was finally adopted by all, seven of them recommending certain amendments, and six ratifying it absolutely. (The Journal of the Philadelphia convention was published in 1819, by order of congress, and the debates of some of the state conventions have also been published. The whole subject is fully argued in the celebrated essays written by Jay, Hamilton and Madison, and collected under the title of the *Federalist.*) July 14, 1788, ten states[*] having acceded to it, it was ratified by congress, and the first president was elected Feb. 1, 1789. The first president was Washington, who was chosen by a unanimous vote of his fellow citizens. The first congress assembled at New York, March 4, 1789, and immediately proceeded to raise a revenue, by imposing duties; to establish a federal judiciary, consisting of a supreme court, with circuit and district courts; to organize the executive administration, by creating the departments of war, of foreign affairs, and the treasury; to fund the debt of the U. States, and assume the state debts; and to create a national bank. The jealousy of state rights, which had made the adoption of a federal constitution a matter of great delicacy and difficulty, began already to manifest itself in opposition to the federal government, and the two parties of federalists and anti-federalists began to be more distinctly marked. Indian hostilities had also required an increase of the military establishment; and the duty on domestic spirits met with such open resistance from the people, that the president issued a proclamation against unlawful combinations and proceedings tending to obstruct the execution of the laws. The period for which the president was chosen having expired, Washington was reëlected by a unanimous vote of the electors, and entered upon the second term of his administration in 1793. An insurrection in the western counties of Pennsylvania, on account of the duties on domestic spirits, was quelled (1794) without bloodshed, by the prudence and vigor of the executive; and the hostilities with the Indians on the western frontier were terminated by the entire defeat of the savages, by general Wayne. Meanwhile, the progress of the French revolution, which had stirred up all the nations of Europe, had excited a lively interest in America. The sympathy aroused by the sight of a nation struggling for liberty, and particularly of a nation which had borne arms in their cause, naturally produced a degree of enthusiasm among the Americans in its favor. The president was determined to maintain a strict neutrality in the contest between the new republic and the European cabinets, in conformity with his settled principle of avoiding entangling alliances with foreigners. The minister of the convention in this country, offended with this neutral policy, actually undertook to raise troops against the Spanish possessions, to fit out naval expeditions in the ports of the U. States, and to take other similar measures in direct defiance of the orders of the executive. He was supported in this conduct by a strong party, which formed democratic societies in different parts of the country; but the course of the president was finally approved by the great body of the nation. A treaty of friendship, limits and navigation, settling the boundaries between the U. States and the Spanish colonies, and conceding to the former the right to navigate the Mississippi, was concluded, after protracted negotiations, Oct. 27, 1795; and a treaty of amity, commerce and navigation (Jay's treaty), with Great Britain, was ratified by the American government, Aug. 14, 1795. This treaty created such divisions in the U. States, as to put in danger the existence of the government. Petitions against it were sent in from all parts of the country, and it was the subject of a violent debate in the house of representatives during the next session of congress.[†] But public opinion was gradually settled in favor of the treaty, as being the only possible means of saving the country from becoming involved in the wars of the French revolution. In the president's message to congress (December, 1796), he urges the necessity of creating a navy, encouraging manufactures and agriculture, establishing a military academy and a national university, and declares his determination to retire from the government, which he did, accordingly, on the 4th of March, 1797. The weight of his personal character was of the highest moment in setting the machinery of the new government in motion, as it had been in carrying on the war, in preserving tranquillity on the conclusion of peace, and in effecting the adoption of the constitution by the convention. In the short period of eight years, all the disputes between the U. States and foreign nations had been adjusted, with the exception of those with France, which had arisen during that time, out of the new state of things in Europe. "At home, public and private credit was restored; ample provision made for the security and ultimate payment of the public debt; American tonnage had nearly doubled; the exports had increased from nineteen to more than fifty-six million of dollars; the imports in about the same proportion; and the amount of revenues from imposts had exceeded the most sanguine calculations." (Pitkin's *History*, &c.) The depredations of French cruisers upon the commerce of the U. States had been such, that, on the 7th of July, 1797, the treaties with France were declared to be no longer obligatory on the U. States; an army was raised, of which general Washington was named commander-in-chief; and several engagements took place at sea between the French and American cruisers. In this crisis, the revolution of 18th Brumaire changed the policy of the French republic, and a treaty was concluded between the two powers, September 30, 1800. On the retirement of Washington, John Adams had been elected to succeed him; and, in 1801, Thomas Jefferson was chosen third president of the U. States. One of the most important events of this period was the purchase of Louisiana from the French government (1803), for the sum of fifteen million dollars, two million and a half of which were retained by the U. States, as a compensation for the illegal captures made by France. An expedition was sent out by the American government to explore the country, which reached the Pacific, across the Rocky mountains. (See *Louisiana.*) The peace of Amiens had restored a short peace to Europe; but hostilities, in which all the European powers were involved, were soon renewed; and the U. States was almost the only power which preserved its neutrality. The Americans, under these circumstances, had become possessed of an extensive and lucrative carrying trade; but the continental system of Napoleon, and the counter measures of the British government (see *Continental System*), directed to the interruption of all commercial intercourse between the respective belligerents and neutrals, led to a series of acts which threatened the entire destruction of American commerce. In addition to the depredations committed by the two powers, Great Britain also claimed the right of searching American vessels, and impressing from them British seamen. In order to counteract the imperial decrees and the British orders in council, the general government laid an embargo, prohibiting the exportation of every article from the U. States (December, 1807), and thus entirely annihilating their foreign commerce; the coasting trade was at that time insignificant, and this measure was received with so much opposition, that, in 1809, the embargo was repealed. At the same time, all trade and intercourse with France and England was prohibited by act of congress. In June, 1812, war was declared against Great Britain, and was continued, with various success, for three years, during which the Americans attempted, without success, the conquest of Canada, and the British were repulsed in several attacks upon the maritime cities. The successes of the Americans by sea were more brilliant. (See *Navy.*) Peace was finally concluded at Ghent, December 24, 1814, by a treaty which settled nothing, and made no allusion to the causes of the war.* The change in Eu-

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[*] New York gave in her adhesion July 26 of that year; North Carolina in November, 1789; Rhode Island, May, 1790.

[†] "The objections of those opposed to carrying the treaty into effect, were, generally, that it wanted reciprocity; that it gave up all claim of compensation for negroes carried away, contrary to the treaty of peace, and for the detention of the western posts; that it contravened the French treaty, and sacrificed the interest of an ally to that of Great Britain; that it gave up, in several important instances, the law of nations, partica-

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larly in relation to free ships making free goods, cases of blockade, and contraband of war; that it improperly interfered with the legislative powers of congress, especially by prohibiting the sequestration of debts; and that the commercial part gave few advantages to the U. States." (Pitkin's *History of the U. States.*)

* The following account of a convention of delegates from several of the New England states, assembled at Hartford in December, 1814, and called the *Hartford Convention*, is from Holmes's Annals: "At this perilous and alarming crisis, some of the northern states held a consultation. The misunderstanding between the national executive and the executives of these states on the requisition of the militia to be placed under offi-

ropean affairs, produced by the peace of Paris in 1815, and the events of the American war, contributed to introduce a considerable change in the policy of the American government, and the relations of domestic parties, which still continues in operation. Previous to this time, party divisions were founded, in a great measure, upon points of foreign policy, and on foreign predilections or aversions. The great facilities for commerce had diverted a great portion of the national capital into commercial channels, and manufactures had received little attention. Since that period, foreign politics have had little influence in the country; manufacturing industry has been developed to an astonishing degree, and taken under the protection of the government; internal improvements—the construction of roads and canals—have been pushed with wonderful vigor; the acquisition of Florida has given a more secure southern boundary to the republic; six new states have been admitted into the Union, and seventeen years of peace and prosperity have well developed the resources of the country.

Geography and Statistics. 1. *Physical Geography.* The U. States form the great middle division of North America, bounded north by New Britain and Upper and Lower Canada, east by New Brunswick and the Atlantic ocean, south by the gulf of Mexico, south-west and south by the country of Mexico, and west by the Pacific ocean. The boundary between the U. States and the British dominions begins at the entrance of the St. Croix into the Atlantic, proceeding up that river to its source; thence due north to the high lands which separate the waters falling into the Atlantic from those falling into the St. Lawrence; thence along those high lands, in a south-west direction, to the parallel of lat. 45° N.; thence along that parallel to the river St. Lawrence; thence up that river, and through the

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cers of the president's appointment, embarrassed the measures of the state governments. Massachusetts, Rhode Island and Connecticut were at this time destitute of the protection of the national troops, and exposed to the ravages of an incensed enemy, with scarcely any other than their own resources, and these continually diminishing, by an onerous system of taxation for the national treasury. The alarm and horror of the people were immeasurably excited, and the pressure upon the state governments was proportionably great. The governor of Massachusetts convoked the general court of that commonwealth; the legislature of Connecticut was about to hold its usual semi-annual session; and the legislature of Rhode Island also assembled. When these several bodies met, what should be done in this unexampled state of affairs, became a subject of most solemn deliberation. To insure unity of views and concert in action, the legislature of Massachusetts proposed a 'conference,' by delegates from the legislatures of the New England states, and of any other states that might accede to the measure. Their resolution for this purpose, and the circular letter accompanying it, show, that the duty proposed to be assigned to these delegates was merely to devise and recommend to the states, measures for their security and defence, and such measures as were 'not repugnant to their federal obligations as members of the Union.' The proposition was readily assented to, and the delegates appointed in pursuance of it met at Hartford on the 15th of December following. The convention recommended, 1. that the states they represent take measures to protect their citizens from 'forcible draughts, conscriptions or impressments, not authorized by the constitution of the U. States.' 2. That an earnest application be made to the government of the U. States, requesting their consent to some arrangement, whereby the states separately, or in concert, may assume upon themselves the defence of their territory against the enemy, and that a reasonable portion of the taxes collected within the states be appropriated to this object. 3. That the several governors be authorized by law to employ the military force under their command in assisting any state requesting it, to repel the invasions of the public enemy. 4. That several amendments of the constitution of the U. States, calculated, in their view, to prevent a recurrence of the evils of which they complain, be proposed, by the states they represent, for adoption either by the state legislatures, or by a convention chosen by the people of each state. Lastly, That if the application of these states to the government of the U. States should be unsuccessful, and peace should not be concluded, and the defence of these states be still neglected, it would, in their opinion, be expedient for the legislatures of the several states to appoint delegates to another convention, to meet at Boston in June, with such powers and instructions as the exigency of a crisis so momentous may require. The effect upon the public mind, in the aggrieved states, was alike seasonable and salutary. The very proposal to call a convention, and the confidence reposed in the men delegated to that trust, served greatly to allay the passions, and to inspire confidence and hope. Nor was the influence of this body upon the national councils less perceptible. Within three weeks after the adjournment of the convention and the publication of their report, an act passed both houses of the national legislature, and received the signature of the president, authorizing and requiring him to 'receive into the service of the U. States any corps of troops which may have been or may be raised, organized, and officered, under the authority of any of the states,' to be 'employed in the state raising the same, or an adjoining state, and not elsewhere, except with the consent of the executive of the state raising the same.' Before the commissioners who were sent to confer with the government could reach Washington, a bill passed the senate, providing for the payment of the troops and militia already called into service under the authority of the states. The arrival of the treaty of peace at this juncture, arrested all further proceedings."

middle of the great lakes Ontario, Erie, Huron and Superior, to the north-west extremity of the lake of the Woods; thence, on the meridian line, to the parallel of lat. 49° N.; thence along that parallel to the Rocky mountains. The north-eastern boundary is yet in dispute. The words of the treaty of 1783 (art. 2) are as follows:—"From the north-west angle of Nova Scotia, viz. that angle which is formed by a line drawn due north from the source of St. Croix river to the high lands, along said high lands which divide those rivers that empty themselves into the river St. Lawrence from those which fall into the Atlantic ocean, to the north-westernmost head of Connecticut river." This part of the country was but imperfectly known at the time of making the treaty, and the dividing ridge of high lands is by the Americans assumed to be in lat. 48°, while, by the English construction, it is placed in lat. 46° 30′. The question in dispute was referred to the arbitration of the king of the Netherlands, whose decision has been rejected by the U. States on the ground that, instead of deciding upon the claims of the two parties, he has attempted to establish a new line of his own, as a matter of expediency and convenience. (The question is fully treated in vols. 26 and 34 of the North American Review.) Between the Rocky mountains and the Pacific ocean the boundary is not yet settled. The country west of the Rocky mountains is claimed by Great Britain; and, by the convention, for ten years, made in 1818 and renewed in 1827, it was agreed, between the U. States and that power, that the country should remain open to both. By the convention of 1824, between Russia and the U. States, it was agreed that the Russians should make no settlements to the south, nor the Americans to the north, of 54° 40′ N. latitude. The boundary on the side of Mexico, as ratified by a treaty with Spain, in 1821, begins on the gulf of Mexico, at the mouth of Sabine river, proceeding along the west bank of that river to lat. 32° N.; thence by a line due north to Red river; thence up that river to the meridian of lon. 100° W.; thence due north along that meridian to the river Arkansas; thence along the south bank of the Arkansas to its source; thence due north to the parallel of lat. 42° N.; and thence along that parallel to the Pacific ocean. Lon. 66° 49′ to 125° W.; lat. 25° to 49° N.; square miles, estimated at upwards of 2,000,000. More than half of the territory included within these limits contains few or no settlers, and is not yet formed into states. If a line were drawn from the mouth of the Sabine due north to the Missouri; thence in a north-easterly direction to the south end of lake Michigan, the eastern division would include nearly all the population, though less than half of the territory. The other division is almost wholly in the possession of the Indians. The line of frontier, taken according to the claims of the U. States, is estimated by Darby as follows:—Frontier in common with British America, from the mouth of the St. Croix to the Rocky mountains, 3000 miles, of which a considerable portion is a natural water boundary; west of the Rocky mountains, northern boundary in common with the Russian settlements, 600 miles; western frontier, along the Pacific ocean, from 54° to 42° N. lat., 800 miles (Darby estimates it from 42° to 51°, 560 miles); in common with Mexico, along the parallel of lat. 42° to the Rocky mountains, and thence, as above described, to the mouth of the Sabine, 2300 miles; along the gulf of Mexico to Florida point, 1000 miles; along the Atlantic ocean to the mouth of the St. Croix, 1850 miles. According to this estimate, the whole line of frontier amounts to about 9550 miles, of which 3650 are sea coast. This vast extent of country, comprising one twentieth of the habitable land of the globe, is divided, by two ranges of mountains, into three great natural sections, the Atlantic slope, the Mississippi valley, and the Pacific slope. The Alleghany (q. v.) chain is more remarkable for its length than its height. Perhaps there is no tract of country in the world that preserves the mountain character over so great a space with so little elevation. The mean height of the Alleghanies is only from 2000 to 3000 feet, about one half of which consists of the elevation of the mountains above their base, and the other of the elevation of the adjoining country above the sea. To this height the country rises, by an almost imperceptible acclivity, from the ocean, at the distance of 200 or 300 miles on the one side, and from the channel of the Mississippi, at an equal distance, on the other. A gradual elevation of 1000 or 1200 feet upon a horizontal surface of 200 or 300 miles, would give the surface of the country, on the eastern side, an average rise of from three to four feet in the mile, and from two to three feet on the western side, allowing for the height of the channel of the Mississippi above the sea. This small degree of inclination accounts for the great extent of inland navigation which the U. States enjoy. By the course of the Mississippi, Ohio and Alleghany rivers, vessels ascend over an inclined plane of 2400 miles in extent, to an elevation of perhaps 1200 or 1400 feet, without the help of canals or locks. The second great mountainous range which traverses the U. States is the Rocky mountains. (q. v.) This ridge is more elevated than the former, but is also more distant from the Pacific ocean on the one side and the Mississippi on the other. From the Mississippi to the Pacific, in lat. 40°, is about 1500 miles; and the Rocky mountains, which crown this gradually-swelling surface, rise, with the exception of some insulated peaks, to a height of about 9000 feet. This elevation is about three times as great as that of the Alleghanies; and it is remarkable that the Mississippi, which is the common reservoir of the streams descending from both, is about three times farther from the higher chain than from the lower, so that the declivity on both sides of the immense basin included between these mountains, is nearly the same; and the streams flowing from the Rocky mountains are as susceptible of navigation as those from the Alleghanies. The Mississippi valley also presents a southern declivity, by which it gradually sinks from the high table land of the centre of the continent to the level of the ocean on the gulf of Mexico. From this table land, which is estimated to have an elevation of not more than 1500 feet above the sea, descend the great rivers of North America—Mackenzie's to the north, the St. Lawrence to the east, and the Mississippi to the south. (See *Mississippi*, *Missouri*, and *Mississippi Valley*.) To the west of the Rocky mountains lies the Pacific slope, the declivity of which is greater and more rapid than those of the others. This region, as yet little known, and unoccupied by whites, is visited only by hunters and trading ships, and is now generally known under the name of Oregon. (See *Columbia*, and *Oregon*.) With regard to soil, the territory of the U. States, to the east of the Rocky mountains, may be classed under five grand divisions:—1. That of the New England states, east of the Hudson, where the Alleghanies spread out into a broken, hilly country. The soil is here, in general, rocky, has but little depth, is barren in many places, and better adapted for pasture than tillage. 2. The sandy soil of the sea shore, commencing from Long Island, and extending along the coast of the Atlantic and the gulf of Mexico, to the mouth of the Mississippi, with a breadth varying from thirty to a hundred miles. This tract, from the Potomac southward, approaches to a horizontal plain, very little raised above the sea, and traversed through its whole breadth by the tide water at the mouths of the great rivers. The surface, which consists of sea sand, is scarcely capable of cultivation, and produces nothing but pines, except on the banks of rivers, and in marshy spots where rice is raised. 3. The land from the upper margin of this sandy tract to the foot of the Alleghany mountains, from ten to two hundred miles in breadth, the soil of which is generally formed from the alluvion of the mountains, and the decomposition of the primitive rocks beneath the surface. This tract is fertile, and generally well adapted for tillage. 4. The valleys between the ridges of the Alleghanies, the soil of which is various, but rather richer than that of the tract last mentioned. 5. The extensive region west of the Alleghanies, bottomed on limestone, well watered, inexhaustibly productive, and containing perhaps as large a proportion of first rate soil as any country in the world. The northern and western parts of the Mississippi valley, stretching for hundreds of miles along the foot of the Rocky mountains, and several hundred miles in width, is a barren desert of sand. (The geology of the U. States has been fully described in the article *North America.*) Volney, who visited the U. States in 1796, describes the country as a vast forest, interrupted by open spaces formed by brackish marshes, and by cultivated tracts round the cities. In a state of nature, the whole Atlantic slope was, in fact, covered by a dense forest, which also spread over a great part of the basin of the St. Lawrence to the fifty-fifth degree of north latitude, and nearly the whole of the Mississippi valley on the east of the river, and stretched beyond the Mississippi for the distance of fifty or one hundred miles. Of this enormous forest, one of the largest on the globe, nineteen twentieths yet remain, the efforts of man having made but partial inroads, on either its mass or its extent. This forest is bounded on its western limits by another region of much greater area, but of a very different character. "This," says Darby, "may be strictly called the grassy section of North America, which, from all that is correctly known, stretches from the forest region indefinitely westward, and from the gulf of Mexico to the farthest arctic limits of the continent." The grassy or prairie region, in general, is less hilly, mountainous or rocky than the forest region; but there are many exceptions to this remark: plains of great extent exist in the latter, and mountains of considerable elevation and mass in the former. The two regions are not divided by any determinate limit, but frequently run into each other, so as to blend their respective features. With the Atlantic ocean on the east, the Pacific on the west, the gulf of Mexico on the south, and an Atlantic coast of nearly 3000 miles, the U. States contain some of the finest harbors in the world. The largest bays are Passamaquoddy, Massachusetts, Delaware and Chesapeake. The principal sounds are Long Island sound, Albemarle and Pamlico sounds. The largest lakes included wholly within the U. States, are Michigan and Champlain. The great lakes Superior, Huron, Erie and Ontario, lie partly within the U. States and partly in the British dominions. The country is intersected by a great number of rivers, which afford great facilities for inland navigation, and an unlimited natural power for mechanical purposes, which, in a great measure, renders the use of steam and other artificial powers unnecessary, and thus gives great advantages to the manufacturing establishments of the country. Some of the principal are the following:—

Rivers flowing into the Atlantic.

	Miles in Length.		Miles in Length.
Penobscot, . .	250	Potomac, . . .	620
Kennebec, . .	200	James, ...	550
Androscoggin,	170	Roanoke, . . .	350
Saco, ...	160	Cape Fear, . .	350
Merrimac, . . .	200	Pedee, ...	450
Connecticut, .	410	Santee, ...	450
Hudson, ...	324	Savannah, . .	700
Delaware, . . .	300	Alatamaha, . .	500
Susquehannah,	450	St. John's, . . .	300

Rivers flowing into the Gulf of Mexico.

Appalachicola,	500	Tombeckbee, .	450
Alabama, . . .	450	Mississippi, .	3000

Rivers tributary to the Mississippi, &c.

Red river, . .	1500	Yellowstone,	1100
Arkansas, . .	2150	Ohio, ...	1350
White river, .	1300	Illinois, ...	500
Missouri, . . .	3100	Moines, ...	800
Kansas, . . .	1200	Tennessee, .	1100
Platte, ...	1500	Cumberland, .	750
Osage, ...	500	Wabash, ...	500

Rivers west of the Rocky Mountains.

Columbia, . .	1500	Lewis's, ...	900
Multnomah, .	900	Clarke's, ...	900

(See the separate articles, and the article *Rivers, Navigable.* Many details in physical geography will also be found in the articles on the separate states, written for this work, and containing the most recent information in regard to this country.)

Climate. In a country having so many varieties of exposure as the U. States, and extending through twenty degrees of latitude, the climate must, of course, be various. In the northern parts, between lat. 42° and 45°, the winter is severe for three or four months: during this season, the snow is abundant enough for the use of sledges, and the ice of the rivers sufficiently strong to bear the passage of horses and wagons. In summer, the heat is very intense during five or six weeks. In the southern parts of New York, Pennsylvania, New Jersey and Maryland, the winter is equally cold, but of shorter duration, generally commencing about the beginning of November, and the severe cold seldom continuing more than fifteen or twenty days. The temperature of the summer is nearly the same as in the Northern States. Between the first of May and the first of October, a fire is not necessary. In the Southern States, including Virginia, the Carolinas and Georgia, the cold gradually diminishes, and to the south of the Potomac there is but little snow except on the mountains. The winds which chiefly prevail, are the north-west, south-west and north-east. The first, which blows from the mountains and high table land, predominates in winter, and is by far the driest and coldest; but along the Atlantic coast, where it meets warm clouds and warm currents of air, it produces snow, hail, and sometimes rain: along the banks of the Mississippi and Ohio rivers, it produces rain in winter and storms in summer. The south-west wind prevails in summer, and is more constant on the western side of the Alleghany mountains than on the Atlantic coast. In the basin of the Mississippi, it is said to prevail throughout the year, except during two months about the winter solstice. The north-east wind, crossing a great extent of sea, brings cold and moisture on all the Atlantic coast. Proceeding southwardly, however, its effects are found to diminish. Its course is directed, in some measure, by that of the mountains, and the space over which it blows is sometimes marked by the snow which it deposits. The following table shows the results of observations taken at several of the military posts in the U. States. The observations were taken at seven o'clock in the morning, and at two and nine in the afternoon, and from these the aggregate means are deduced:—

For the Year 1827.

Places of Observation.	THERMOMETER.				WINDS.							
	Aggr. mean temp.	Highest deg.	Lowest deg.	Range.	N. days.	N. W. days.	N. E. days.	E. days.	S. E. days.	S. days.	S. W. days.	W. days.
Fort Brady, ...	41.46	84	—20	104	0.75	9.41	4.82	3.08	6.16	0.75	3.00	2.47
Fort Snelling, ...	46.10	96	—22	118	1.33	2.83	1.92	1.41	2.42	5.75	5.33	9.42
Fort Howard, ...	45.60	98	—16	114	2.42	2.17	5.33	1.17	0.83	4.17	5.17	9.00
Fort Preble, ...	45.93	95	— 8	103	2.42	5.17	2.75	1.58	3.75	4.92	6.17	3.67
Fort Constitution, . .	46.22	92	— 8	100	2.00	7.16	3.66	1.42	1.17	8.00	2.58	4.42
Fort Wolcott, ...	49.73	86	— 2	88	2.33	9.58	4.83	0.42	2.25	0.58	9.50	0.92
Fort Armstrong, . .	51.83	94	— 6	100	3.83	5.42	2.58	2.75	2.08	6.83	4.08	2.83
West Point, ...	51.66	101	—10	111	4.50	8.25	2.17	0.50	4.83	4.00	3.92	2.25
Fort Trumbull, . . .	53.10	88	0	88	2.08	4.67	5.00	1.33	3.25	3.83	7.16	3.83
Fort Columbus, . . .	51.77	96	0	96	3.75	7.50	3.25	1.08	5.08	3.50	3.08	3.17
Washington, ...	57.84	98	9	89	1.75	9.00	5.25	0.58	4.00	2.58	6.00	1.00
Jefferson Barracks, .	59.27	94	8	86	3.25	4.92	0.58	1.92	3.42	6.67	4.25	5.42
Fortress Monroe, . .	60.37	94	13	81	2.00	3.00	6.92	3.42	5.33	1.92	6.16	1.67
Augusta, ...	66.81	102	26	76	2.08	2.58	3.16	3.00	4.17	3.67	6.50	4.50
Cantonment Jesup, .	69.22	95	24	71	1.25	4.83	6.50	3.58	8.17	2.67	2.17	1.17
Cantonment Clinch,	70.32	92	24	68	3.50	3.16	1.75	0.67	5.58	5.08	9.58	1.08
Petites Coquilles, . .	70.79	95	23	72	1.00	3.33	5.08	6.83	4.67	3.83	3.67	2.00
Cantonment Brooke,	74.19	94	26	68	0.25	1.67	1.83	1.25	5.83	3.83	3.33	12.42

When North America first began to be colonized by the Europeans, it was soon discovered that the temperature of any given latitude was much more rigorous than in the same latitude in Europe. Different explanations have been given of this phenomenon, of which the following are some of the most striking circumstances. Humboldt has endeavored to connect the system of climates of the old world with that of the new, by fixing, at every ten degrees of latitude, under different meridians, a small number of places, whose mean temperature has been correctly ascertained, and through these, as so many standard points, supposing certain lines of equal heat, or isothermal lines, to pass. The observations which have been made on the temperature of places in the eastern and western continents, show that, advancing seventy degrees to the east or west, a sensible alteration in the heat of the atmosphere is found. Places situated, however, under the same latitudes in America and Europe, do not differ so many degrees as has been commonly supposed. The following tables indicate the difference of climates expressed by that of mean temperature, and by the number of degrees which it is necessary to go northward, in Europe, in order to find the same quantity of annual heat as in America; the differences under the column of latitudes are the differences between the latitude of a place in Europe and a place in America, which have the same mean temperature; and the differences under the column of mean temperatures are the differences between the mean temperature of a place in Europe and of one in America, having the same latitude. As a place could not be found in the old world, whose mean temperature was 58°, the same as that of Williamsburg, Humboldt supplied it with an interpolation between the latitudes of two points, whose mean temperatures are 56°.5 and 59°.4.

1. *Parallels of Georgia, Mississippi, Lower Egypt and Madeira.*

	Latitude.	Mean Temp
Natches, ...	31° 28′	64° 8
Funchal, ...	32 37	68 7
Orotava, ...	28 25	69 8
Rome, ...	41 53	60 4
Algiers, ...	36 48	70 0
Difference, . . .	7° 0′	4° 1′

2. *Parallels of Virginia, Kentucky, Spain and Southern Greece.*

	Latitude.	Mean Temp.
Williamsburg, . .	38° 8′	58° 0′
Bordeaux, ...	44 50	56 5
Montpellier, ...	43 56	59 4
Rome, ...	41 53	60 4
Algiers, ...	36 48	70 0
Difference, ...	7° 0′	7° 7

3. *Parallels of Pennsylvania, Jersey, Connecticut, Latium and Rumelia.*

	Latitude.	Mean Temp.
Philadelphia,	39° 56′	54° 9′
New York,	40 40	53 8
St. Malo,	48 39	54 5
Nantes,	47 13	54 7
Naples,	40 50	63 3
Difference,	7° 0′	9° 5′

	Latitude.	Mean Temp.
Ipswich,	42° 38′	50° 0′
Cambridge, (N. E.)	42 25	50 4
Vienna,	48 13	50 5
Manheim,	49 29	51 3
Toulon,	43 7	62 1
Rome,	41 53	60 4
Difference,	6° 30′	11° 0′

4. *Parallels of Canada, Nova Scotia, France and Southern Germany.*

	Latitude.	Mean Temp.
Quebec,	46° 47′	41° 9′
Upsal,	49 51	41 9
Padua,	45 24	57 7
Paris,	48 50	51 4
Difference,	13° 0′	12° 6′

5. *Parallels of Labrador, south of Sweden and Courland.*

	Latitude.	Mean Temp.
Nains,	57° 0′	26° 4′
Okak,	57 20	29 8
Umea,	63 50	33 3
Enoutekies,	68 30	27 0
Edinburgh,	55 58	47 8
Stockholm,	59 20	42 3
Difference,	11° 0′	17° 1′

By an analogous method, he found that the isothermal line of 32° passes between Uleo and Enoutekies, in Lapland (lat. 66° to 68°), and Table bay, in Labrador (lat. 54°); 2. that the isothermal line of 41° passes by Stockholm (lat. 60°) and the bay of St. George, Newfoundland (lat. 48°); 3. that the isothermal line of 50° passes by Belgium (lat. 51°) and Boston (lat. 42° 30′); 4. that the isothermal line of 59° passes between Rome and Florence (lat. 43°) and near Raleigh (lat. 36°). The direction of these lines of equal heat gives for the two systems of temperature known by precise observation, viz. that of the middle and west of Europe and that of the east of America, the following differences:

Lat.	Mean Temp. of west of Old World.	Mean Temp. of east of New World.	Diff.
30°	70°.52	66°.92	3°.60
40	63 .14	54 .50	8 .64
50	50 .90	37 .94	12 .96
60	40 .64	23 .72	16 .92

In tracing the directions of the isothermal lines from Europe to the Atlantic countries of the new world, they are found to have the character of parallelism towards the south, and to converge towards the north, particularly between the thermometric curves of 41° and 50°. In pursuing these lines to the west, the thermometric means prove that they do not again rise, the quantity of heat which each point of the globe receives under the same parallels being nearly the same on the east and west sides of the Alleghany mountains. The presence of the *gleditsia monosperma*, the *catalpa*, and other vegetable productions, several degrees farther to the north, in the basin of the Ohio, than on the coast of the Atlantic, led, at one time, to the supposition that there was a difference of temperature amounting to three degrees; but Humboldt has now clearly explained that the migration of vegetables towards the north is favored in the basin of the Mississippi by the form and direction of the valley, which opens from north to south; while, in the Atlantic states, the valleys are transverse, and oppose great obstacles to the passage of plants from one valley to another. The following is a comparison of the mean temperature of an Atlantic city with that of one in the Mississippi valley:—

	Cincinnati. Lat. 36° 6′ N.	*Philadelphia.* Lat. 39° 56′ N.
Winter,	32° 9′	32° 2′
Spring,	54 1	51 4
Summer,	72 9	73 9
Autumn,	54 9	56 5
Mean,	53 7	53 5

If the isothermal lines remain parallel, or nearly so, to the equator, from the Atlantic shores to the Rocky mountains, it cannot be doubted that they rise again beyond the mountains, between 35° and 55° N. latitude. Through 122° 40′ W. longitude, the isothermal line of 50° of temperature appears to pass, almost as in the Atlantic part of the eastern continent, at 50° of latitude. The western coasts of the continents resemble one another to a certain point. But these returns of the isothermal line do not extend beyond 60°. The distribution of heat over different parts of the year, differs extremely in the same isothermal line on the two continents. The whole of Europe, compared with the eastern parts of America and Asia, has an insular climate; and upon the same isothermal line, the summers become warmer, and the winters colder, as we advance from the meridian of Mont Blanc towards the east or west. Europe may be considered as the western prolongation of the old continent, and the western parts of all continents are not only warmer at equal latitudes than the eastern parts, but even in zones of equal annual temperature, the winters are more rigorous, and the summers hotter, on the eastern coast than upon the western coasts of the two continents. The northern part of China, like the Atlantic region of the U. States, exhibits seasons strongly contrasted; while the coasts of New California and the mouth of the Columbia have winters and summers almost equally temperate. The meteorological constitution of these countries in the northwest resembles that of Europe as far as 50° or 52° N. latitude. In comparing the two systems of climates, we find at New York the summer of Rome and the winter of Copenhagen; at Quebec, the summer of Paris and the winter of Petersburg. At Pekin, China, the scorching heats of summer are greater than at Cairo, and the winters as rigorous as at Upsal. It appears, according to the observations of Darby, that the mean annual fall of rain in the U. States amounts to about 37⅛ inches, while in north-western Europe it amounts to about 31.2 inches; but that the number of rainy days in the latter region is much greater than in the former. This is explained by the fact, that rains are much more heavy in the U. States than in Europe. (See *Climate*, *Temperature*, and *Winds*.)

Productions. The vegetable productions of the U. States are exceedingly various; there are some, however, common to every section of the Union. Maize, or Indian corn, an indigenous American plant, is cultivated from Maine to Louisiana, but succeeds best in the Western and Middle States. It is adapted to a greater variety of soils and situations than wheat, and yields generally double the produce: land of the first quality has been known to give 100 bushels to an acre. Wheat is also cultivated from one extremity of the Union to the other, but of superior quality in the Middle and Western States.

Inspection of Wheat and Rye Flour, and Indian Corn Meal, during ten Years.

	Wheat Flour.	Rye Flour.	Indian Meal.	
	Barrels.	*Barrels.*	*Hogsheads.*	*Barrels.*
1821	1,707,350	43,976	17,449	40,693
1822	1,599,973	59,363	15,157	32,274
1823	1,557,724	75,620	14,705	36,862
1824	1,714,410	68,380	17,192	70,415
1825	1,882,611	57,419	14,781	51,297
1826	2,031,558	27,282	18,619	36,979
1827	2,061,559	34,487	16,869	51,192
1828	2,245,257	55,239	19,178	78,958
1829	2,255,132	77,945	17,891	51,766
1830	2,851,876	41,351	18,372	35,070

The cultivation of tobacco begins in Maryland, about the parallel of 39° or 40°, and continues through all the Southern States, and partially in the Western States south of the Ohio. It forms the staple of Maryland and Virginia, where it is raised to a greater extent than in any other part of the Union. (See *Tobacco*.) The soil and climate favorable for cotton is not found beyond 37°, though it can be raised as far north as 39° on both sides of the Alleghanies. It was first cultivated for exportation in 1791, and is raised from the Roanoke to the Sabine, forming the staple of the Southern and South-western States. (See *Cotton*.) The rice crops require great heat and a marshy soil, commence about the same parallel with the cotton, and have nearly the same geographical range. Rice is cultivated to a great extent in the Carolinas, Georgia, &c., Louisiana, and as high as St. Louis in Missouri. The sugar-cane grows in low and warm situations as high as the latitude of 33°; but the climate favorable for its production does not extend beyond 31° 30′. It is now cultivated to a great extent in Louisiana: in 1829, there were 691 plantations in that state, producing 81,000 hogsheads of 1000 pounds each. Oats, rye and barley are raised in all the Northern and in the upper districts of the Southern States. Hemp, flax and hops are produced of an excellent quality.

Hemp grows naturally in the Western States, and hops in the Western and Middle States. The vine has been successfully cultivated in various parts of the Union, and the mulberry-tree grows spontaneously, and has been extensively planted of late years. Fruits of all kinds of the temperate and tropical climates, and the culinary vegetables which have been introduced from Europe, thrive here. The forest contains a great variety of useful trees, some of which are of great size and height. Among the forest trees are numerous species of oak, ash, beech, pine, magnolia, elm, maple, &c., affording an unbounded supply of excellent wood for ship-building, carpentry, cabinet work, &c., naval stores, sugar (see *Maple*), &c. The domestic animals are the same as those of Europe, and they are found to thrive remarkably well. Among the wild animals there are many which bear the same name with those of the old continent, but which differ from them in their characteristics. Some of the most remarkable wild animals are the bison (improperly called *buffalo*), the black bear, the grisly bear, the cougar or puma (incorrectly called *panther*), the wild-cat, the wolf, the lynx, &c., the Rocky mountain sheep, the moose, elk and other species of deer (q. v.), the antelope, &c.; among the smaller animals, the beaver, skunk, glutton, raccoon, marten, badger, opossum, squirrel, fox, otter, porcupine, &c. (See the articles.) The birds are numerous. Among them are the wild turkey, wild pigeon, swan, wild goose and wild duck, quail, &c.; the eagle, mocking-bird, humming-bird, &c. (see the articles), some of which are remarkable for the beauty of their plumage, the richness and variety of their song, or the excellence of their flesh. Among the reptiles, the alligator, tortoise, serpents, frogs, &c. are separately described. (The works of Michaux, Wilson, Audubon, Bonaparte, Nuttall, Godman, treat fully of the forest trees, the birds and the quadrupeds of the U. States.) The mineral kingdom is equally rich in its productions. Iron, coal, lime and salt, articles of primary importance, exist in great abundance. Lead is found in inexhaustible quantities in Missouri. Salt, which is obtained from the sea on the eastern side of the Alleghanies, is procured on the western side from salt springs, which are numerous and copious in their produce, all over the Western States. The supply of coal is equally abundant: on the west of the mountains, immense beds of bituminous coal stretch for hundreds of miles through the valley of the Mississippi; and on the east anthracite coal is found in various positions. Gold has recently been found, in considerable quantities, in some of the Southern States.

2. *Political Divisions and Population.* The U. States are divided politically into twenty-four states, three territories, and the district of Columbia; all of which, with the exception of Louisiana and Missouri states and Arkansas territory, lie on the east of the Mississippi. The states are Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut (familiarly known as the Eastern or New England States*), New York, New Jersey, Pennsylvania, Delaware (Middle States), Maryland, Virginia, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana (Southern States), Tennessee, Kentucky, Ohio, Indiana, Illinois and Missouri (Western States). The territories are Florida, Michigan and Arkansas. The regions to the west of Missouri and lake Michigan have few inhabitants, and have no separate governments. The whole inhabited part of the country within the limits described in the beginning of this article, is about 800,000 square miles in extent; and the total population, according to the official census of 1830, is 12,858,670, of which 10,530,044 are whites, 319,576 free colored persons, and 2,009,050 slaves. The following table exhibits the area in square miles, and the population, according to five official enumerations, of the several states and territories:—

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* Foreigners often confound these geographical with political divisions, and speak of the "state of New England," &c.

STATES.	Square miles.	POPULATION.					Incr. pr. ct. 10 ys.
		1790.	1800.	1810.	1820.	1830.	
Maine, ...	32,628	96,540	151,719	228,705	298,335	399,437	33.9
New Hampshire	9,491	141,885	183,858	214,460	244,161	269,328	10.4
Vermont, . . .	10,212	85,539	154,465	217,895	235,764	280,657	19.0
Massachusetts,	7,500	378,787	422,845	472,040	523,287	610,408	16.6
Rhode Island,	1,340	68,825	69,122	76,931	83,059	97,199	17.0
Connecticut, .	4,764	237,946	251,002	261,942	275,248	297,675	8.2
New York, . .	46,085	340,120	586,050	959,049	1,372,812	1,918,608	39.4
New Jersey, .	8,320	184,139	211,149	245,562	277,575	320,823	15.6
Pennsylvania, .	44,000	434,373	602,545	810,091	1,049,313	1,348,233	28.4
Delaware, . . .	2,120	59,096	64,273	72,674	72,749	76,748	5.5
Maryland, . . .	13,950	319,728	345,824	380,546	407,350	447,040	9.7
Virginia, ...	64,000	747,610	880,200	974,622	1,065,366	1,211,405	13.7
North Carolina,	48,000	393,951	478,103	555,500	638,829	737,987	15.6
South Carolina,	28,000	249,073	345,591	415,115	502,741	581,185	15.7
Georgia, ...	62,000	82,548	162,686	252,433	340,989	516,823	51.5
Alabama, . . .	46,000		8,850	40,352	127,901	309,527	141.6
Mississippi, . .	45,760				75,448	136,621	80.1
Louisiana, . . .	48,220			76,556	153,407	215,739	40.7
Tennessee, . .	40,000		105,602	261,727	420,813	681,903	62.7
Kentucky, . .	42,000	73,677	220,959	406,511	564,317	687,917	22.1
Ohio, ...	39,128		45,365	230,760	581,434	935,884	61.2
Indiana, ...	37,000		4,651	24,520	147,178	343,031	132.1
Illinois, ...	52,000		215	12,282	55,211	157,445	185.4
Missouri, . . .	63,000			19,783	66,586	140,455	110.4
Michigan, . . .	40,000		551	4,762	8,896	31,639	250.1
Arkansas, . . .				1,062	14,273	30,388	113.3
Florida, ...	45,000					34,730	
Dist. Columbia,	100		15,093	24,023	33,039	39,834	20.1
Total, ...		3,929,328	5,309,758	7,239,903	9,638,166	12,858,670	33.4

Slaves, according to five official Enumerations.

STATES.	1790.	1800.	1810.	1820	1830.
Maine.					
New Hampshire, ...	158	8			
Vermont, ...	16				
Massachusetts.					
Rhode Island, ...	948	380	108	48	14
Connecticut, ...	2,764	951	310	97	23
New York, ...	21,324	20,613	15,017	10,088	76
New Jersey, ...	11,423	12,422	10,851	7,557	2,254
Pennsylvania, ...	3,737	1,706	795	211	403
Delaware, ...	8,887	6,153	4,177	4,509	3,292
Maryland, ...	103,036	108,554	111,502	107,398	102,994
Virginia, ...	292,627	346,968	392,518	425,153	469,757
North Carolina, ...	100,571	133,296	168,824	205,017	245,601
South Carolina, ...	107,094	146,151	196,365	258,475	315,401
Georgia, ...	29,264	59,699	105,218	149,656	217,531
Alabama, ...		3,489	17,088	41,879	117,549
Mississippi, ...				32,814	65,659
Louisiana, ...			34,660	69,064	109,588
Tennessee, ...		13,584	44,535	80,107	141,603
Kentucky, ...	12,430	40,344	80,561	126,732	165,213
Ohio, ...	3,417				
Indiana, ...		133	237	190	
Illinois, ...			168	917	746
Missouri, ...			3,011	10,222	25,090
Michigan, ...			24		32
Arkansas, ...				1,617	4,576
Dist. Columbia, ...		3,244	5,395	6,377	6,119
Florida, ...					15,501
Total, ...	697,696	896,849	1,191,364	1,538,064	2,009,050

It was provided by the constitution, that the first census of the U. States should be made within three years after the first meeting of congress, and within every subsequent term of ten years, in such manner as they shall by law direct. The first census was accordingly taken in 1790, and the fifth in 1830. These several enumerations furnish satisfactory views of the rapid progress of population; but it is much to be regretted that a more uniform and philosophical system of classification of the inhabitants, with respect to age, has not been adopted. In this respect there is a great diversity among the several censuses; yet there has been a gradual improvement, and the division adopted in the last is far the best, and, with respect to the white inhabitants, very satisfactory. But, in this census, there is a want of uniformity in the division of ages between the white and the colored population—a circumstance which renders it very defective as a basis for comparative views relating to these two classes.

THE FIRST CENSUS.—1790.

In the first census, the whole population of the U. States was divided into only five classes, in which the total amount of the several classes was as follows:

Free White Males.

1. Under 16 years,	802,127
2. Of 16 years and upwards,	813,365
3. *Free white females,*	1,475,656
4. *All other free persons except Indians not taxed,*	59,511
5. *Slaves,*	697,696
Total,	3,929,328

THE SECOND CENSUS.—1800.

In the second census, the total population of the U. States was divided into twelve classes, the free white males and the free white females being each distributed into five classes, according to age, and all other free persons, except Indians not taxed, forming the eleventh class, and the slaves the twelfth. The following statement exhibits the total amount of each of the several classes:

Free White Males.

1. Under 10 years of age,	715,046
2. Of 10 and under 16 years,	343,650
3. Of 16 and under 26 years,	393,934
4. Of 26 and under 45 years,	478,520
5. Of 45 years and upwards,	263,075

Free White Females.

6. Under 10 years of age,	726,774
7. Of 10 and under 16 years,	323,906
8. Of 16 and under 26 years,	403,553
9. Of 26 and under 45 years,	406,207
10. Of 45 years and upwards,	254,991
11. *All other persons except Indians not taxed,*	110,072
12. *Slaves,*	896,849
Total,	5,309,758

THE THIRD CENSUS.—1810.

In taking the third census, the same divisions were adopted as in the second; and the numbers of the several classes were as follows:

Free White Males.

1. Under 10 years of age,	1,035,278
2. Of 10 and under 16,	468,183
3. Of 16 and under 26,	547,597
4. Of 26 and under 45,	572,347
5. Of 45 and upwards,	364,736

Free White Females.

6. Under 10 years of age,	981,426
7. Of 10 and under 16,	448,322
8. Of 16 and under 26,	561,668
9. Of 26 and under 45,	544,156
10. Of 45 and upwards,	338,378
11. *All other free persons except Indians not taxed,*	186,446
12. *Slaves,*	1,191,364
Total,	7,239,903

THE FOURTH CENSUS.—1820.

In the first three enumerations, "all other free persons except Indians not taxed" were thrown into one mass, without distinction of age or sex, and the same course was adopted respecting the slaves; but in the fourth census, each sex of both these descriptions of persons was distinguished, according to age, into four classes, and each sex of the free white inhabitants was divided, as in the second and third censuses, into five classes; and, in addition, the number of free white males between sixteen and eighteen years was exhibited in a distinct column. Persons engaged in agriculture, commerce and manufactures, were also distinguished into three several classes; and "foreigners not naturalized" formed an additional class. This census gave the following results:

Free White Males.

1. Under 10 years,	1,345,220
2. Of 10 and under 16,	612,535
3. Of 16 and under 26,	776,150
4. Of 26 and under 45,	766,083
5. Of 45 and upwards,	495,065

Free White Females.

6	Under 10 years, ...	1,280,550
7	Of 10 and under 16, ...	605,348
8.	Of 16 and under 26, ...	781,371
9	Of 26 and under 45, ...	736,600
10.	Of 45 and upwards, ...	462,788

Slaves.

11.	Males under 14 years, . . .	343,852
12.	“ of 14 and under 26, .	203,088
13.	“ of 26 and under 45, .	163,723
14.	“ of 45 and upwards, .	77,365
15.	Females under 14 years, .	324,344
16.	“ of 14 and under 26, .	202,436
17.	“ of 26 and under 45, .	152,693
18.	“ of 45 and upwards, .	70,627

Free Colored Persons.

19.	Males under 14 years, . . .	47,659
20.	“ of 14 and under 26, .	24,048
21.	“ of 26 and under 45, .	23,450
22.	“ of 45 and upwards, .	17,613
23.	Females under 14 years, .	45,898
24.	“ of 14 and under 26, .	28,800
25.	“ of 26 and under 45, .	27,181
26.	“ of 45 and upwards, .	18,881
27.	*All other persons except Indians not taxed*, ...	4,631
	Total, ...	9,638,166
28.	*Free white males between* 16 *and* 18, ...	182,205
29.	*Foreigners not naturalized,*	53,687
30.	*Persons engaged in agriculture,*	2,070,646
31.	*Persons engaged in commerce,*	72,493
32.	*Persons engaged in manufactures,*	349,506

THE FIFTH CENSUS.—1830.

In the fifth census, a new division of white persons has been adopted, each sex, under twenty years, being distributed into quinquennial divisions, and above twenty, into decennial divisions, while each sex of free colored persons and slaves is divided into six classes. This census gives the following results:

White Persons.

	Males.	Females.
Under 5 years,	972,194	920,104
Of 5 and under 10,	782,637	751,649
10 “ 15,	671,688	639,063
15 “ 20,	575,614	597,713
20 “ 30,	952,902	915,662
30 “ 40,	592,596	555,565
40 “ 50,	369,370	355,425
50 “ 60,	230,500	225,928
60 “ 70,	134,910	130,866
Of 70 and under 80,	58,136	58,034
80 “ 90,	15,945	17,272
90 “ 100,	1,993	2,484
Upwards,	274	234
Total,	5,357,102	5,172,942

Total whites, ... 10,530,044

Free Colored Persons.

	Males.	Females.
Under 10 years,	48,737	47,347
Of 10 and under 24,	43,126	48,125
24 “ 36,	27,629	32,504
36 “ 55,	22,262	24,266
55 “ 100,	11,475	13,369
Upwards,	266	361
Total,	153,443	166,133

Total free colored, ... 319 576

Slaves.

	Males.	Females.
Under 10 years,	353,845	347,566
Of 10 and under 24,	313,676	308,793
24 “ 36,	185,654	186,082
36 “ 55,	118,996	111,753
55 “ 100,	41,456	41,422
Upwards,	718	668
Total,	1,012,822	996,228

Total slaves, ... 2,009,050

Total population, ... 12,858,670

Number of Deaf and Dumb Persons.

WHITES.

Under 14 years of age, ...	1652
Upwards of 14 and under 25, ...	1905
Upwards of 25, ...	1806
	5363

BLACKS.

Under 14, ...	273	
Under 25, ...	246	
Upwards, ...	224	
		743
Total, ...		6106

Blind Persons.

Whites, ...	3974
Blacks, ...	1470
Total, ...	5444

Aliens, ... 107,832

These facts give the following results illustrative of the density and distribution of the population:—Number of inhabitants to a square mile in the U. States, 16; in New England, 20.9; in the Middle States, 36.3; in the Southern States, 7; in Massachusetts, 81; in New York, 41.5; in Pennsylvania, 30.6; in Ohio, 24; in

Illinois, 3; in the Western States, 11. In England, the density of the population is about 230 persons to the square mile; in France, 160; in Germany, it varies from 100 to 200.* The number of Indians within the U. States was estimated, in 1830, at about 313,000, of which upwards of 215,000 were to the west of the limits above described as inhabited by the whites; but measures have since been in progress for removing those within the limits of the states to a region on the western borders of Arkansas territory; and we have no certain data as to the actual number now remaining within the settled parts of the U. States. Many of those who remain have become so much intermingled with blacks, that they

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* The following curious speculations concerning the future progress of the population of the American continent are deserving of attention. They are taken from the Encyclopædia Britannica, now publishing in Edinburgh, article *America*. "Humboldt gives the following estimate of the entire population of America in 1823:

			Proportion.
Whites,		13,471,000	38 per cent.
Indians,		8,610,000	25
Negroes,	slaves,	5,000,000	19
	free,	1,433,000	
Mixed races,		6,428,000	18
		34,942,000	

If we assume the annual ratio of increase to be two per cent. per annum upon the whole, the entire population in 1830 will be about 40,000,000, distributed as follows:—

Brazil,	5,000,000	British America,	1,870,000
Colombia,	2,860,000	Hayti,	935,000
La Plata,	550,000	Spanish islands,	800,000
Peru,	1,740,000	French America,	224,000
Bolivia,	1,200,000	Danish America,	40,000
Chile,	1,200,000	Dutch America,	114,000
Paraguay,	250,000	Independent Indians,	1,400,000
Banda Oriental,	100,000		
Guatimala,	2,000,000		
Mexico,	8,000,000		
U. States,	12,000,000		

The black population of America forms three groups, the centres of which are in the southern parts of the U. States, in the West India islands, and in the eastern parts of Brazil:

U. States,	2,000,000
West Indies,	2,400,000
Brazil,	2,800,000
	7,200,000

The number of blacks in all other parts of America probably does not amount to 100,000.—One of the most interesting questions connected with America, relates to the increase and probable amount, at a future period, of its inhabitants. It was the astonishing progress of the U. States that first clearly unfolded the principles on which the multiplication of human beings depends. We know with certainty that a prosperous community, possessing abundance of unoccupied land, will double its numbers in 25 [23] years, without any aid from emigration; and as the scale ascends in a geometrical ratio, a short time necessarily produces a wonderful change. It is to be observed, however, that the whites, possessing the advantages of superior industry, order, and forethought, naturally increase faster than the other classes. In the U. States, this part of the population increases at the rate of three per cent. [3½] per annum; and when the Spanish American republics have settled down into a tranquil state, there is no doubt that their white inhabitants will multiply at the same rate. The Mexican Indians, and probably the Peruvians, have also been increasing, but slowly, while nearly all the independent tribes have been mouldering away. The black population does not maintain its numbers in the West Indies: it is rather increasing in Brazil, and in the U. States it grows rapidly. Setting aside the West Indies, where the negroes do not increase, and attending to the continent merely, let us take the number of each class as it stands at present, and see what the result will be in a course of years, assuming the rate of increase to be three per cent. for the whites, one and a half per cent. for the negroes, and one per cent. for the civilized Indians. If the whole population is 40,000,000 at present, the continental whites will be about 16,000,000, the Indians about 9,500,000, the negroes 5,000,000, and the mixed race 7,000,000. In Spanish America, it may be assumed that the mixed race, consisting almost entirely of mestizoes, will merge into the white, and increase nearly in the same ratio. We shall therefore add five sevenths of the former to the latter, which will raise the whites to 21,000,000.

Number of whites in		1830,	21,000,000
"	"	1855,	42,000,000
"	"	1880,	84,000,000
"	"	1905,	168,000,000
"	"	1930,	336,000,000

As the difficulty of providing for the growing annual increment of inhabitants must increase with the magnitude of the population, let us assume that, at the end of a century, the rate of increase falls to two per cent. The period of doubling will then be thirty-six years.

Number of whites in		1966,	672,000,000
"	"	2002,	1,344,000,000
"	"	2030,	2,380,000,000

Thus, in two centuries, the whites now in America would multiply to a mass of people three times as great as are at present on the whole surface of the globe. The new continent, though less than half the size of the old, contains at least an equal quantity of useful soil, and much more than an equal amount of productive power. Of the 31,000,000 of square miles which compose the three eastern continents, we cannot find that the productive soil constitutes so much as one third, and of that third a part is poor. Now, in estimating the useful soil of America, we reject, 1. all the region northward of the latitude of 53°, amounting to 2,600,000 square miles; 2. a belt of barren land about 300 miles broad by 1000 in length, or 300,000 square miles, lying on the east side of the Rocky mountains; 3. a belt of arid land, of similar extent, situated on the east side of the Andes, between 24° and 40° of south latitude; 4. the desert shore of Peru, equal to 100,000 square miles; 5. an extent of 100,000 square miles for the arid country of California and Sonora; and 6. an extent of 500,000 square may be more properly designated as colored persons than as Indians. (See *Indians, American; Indian Languages of America;* and *Tsulakees.*)

Towns with a Population of more than 5000.

Maine.

Portland	12,601

New Hampshire.

Portsmouth,	8,082
Dover,	5,449

Massachusetts.

Boston,	61,392
Salem,	13,886
Charlestown,	8,787
New Bedford,	7,592
Gloucester,	7,513
Nantucket,	7,202
Springfield,	6,784
Lowell,(1832)	10,000
Newburyport,	6,388
Lynn,	6,138
Cambridge,	6,071
Taunton,	6,045
Roxbury,	5,249
Marblehead,	5,150
Middleboro',	5,008

Rhode Island.

Providence,	16,882
Newport,	8,010
Scituate,	6,853
Warwick,	5,529

Connecticut.

New Haven,	10,678
Hartford,	9,789
Middletown,	6,892
Norwich,	5,169

New York.

New York,	203,007
Brooklyn,	15,396

miles for the summits of the Andes and the southern extremity of Patagonia. These make an aggregate of 3,900,000 square miles, which, deducted from 13,900,000, the whole surface of the American continent, leaves 10,000,000 square miles as the quantity of useful soil. Now, what relation does the fruitfulness of the ground bear to the latitude of the place? The productive powers of the soil depend on two circumstances, heat and moisture; and these increase as we approach the equator. First, the warm regions of the globe yield larger returns of those plants which they have in common with the temperate zones; and, next, they have peculiar plants, which afford a much greater proportion of nourishment from the same extent of surface. Thus maize, which produces 40 or 50 for 1 in France, produces 150 for 1, on an average, in Mexico; and Humboldt computes that an arpent (five sixths of an acre), which will scarcely support two men when sown with wheat, will support fifty when planted with bananas. From a consideration of these and other facts, we infer that the nutritive powers of the soil will be pretty correctly indicated by combining the ratios of the heat and moisture, expressing the former of these in degrees of the centigrade scale.

Latitude.	Annual Rain. Inches.	Mean Annual Heat.	Product.	Ratio.
60°	16	7	112	4
45	29	14	406	15
0	96	28	2688	100

Thus the same extent of ground which supports four persons at the latitude of 60° would support fifteen at the latitude of 45°, and 100 at the equator. But the food preferred will not always be that which the land yields in greatest abundance; and the power of the human frame to sustain labor is greatly diminished in hot climates. On these grounds, we shall consider the capacity of the land to support population as proportional to the third power of the cosine for the latitude. It will therefore stand thus:

Latitude,	0°	15°	30°	45°	60°
Productiveness,	100	90	65	35	12½

Assuming that the number of persons whom a square mile can sustain without pressure is 150 at the latitude of 50°, we have 26 as the sum which expresses the productiveness of this parallel. Then, taking, for the sake of simplicity, 35 as the index of the productiveness of the useful soil beyond 30° in America, and 85 as that of the country within the parallel of 30° on each side of the equator, we have about 4,100,000 square miles, each capable of supporting 200 persons, and 5,700,000 square miles, each capable of supporting 490 persons. It follows that, if the natural resources of America were fully developed, it would afford sustenance to 3,600,000,000 of inhabitants, a number five times as great as the entire mass of human beings existing at present upon the globe. And, what is more surprising, there is every probability that this prodigious population will be in existence within three, or, at most, four centuries. The imagination is lost in contemplating a state of things which will make so great and rapid a change in the condition of the world. We almost fancy that it is a dream; and yet the result is based on principles quite as certain as those which govern the conduct of men in their ordinary pursuits. There are many elements of disorder now operating in Spanish America, but these are merely the dregs left by the old Spanish despotism; and the Anglo-American republic is a pole-star to guide the people in their course towards freedom and prosperity. Nearly all social improvements spring from the reciprocal influence of condensed numbers and diffused intelligence. What, then, will be the state of society in America two centuries hence, when a thousand or two thousand millions of civilized men are crowded into a space comparatively so narrow, and when this immense mass of human beings speak only two languages! We take for granted that the Portuguese will merge into the Spanish; and it is clear to us that the Russian will never obtain a footing in the new world. Such a state of things may be said to undo the curse of Babel, and restore the great mass of mankind to their pristine facility of intercourse; for the languages spoken by the communities of Europe and Asia will be as unimportant then, in the general scale of the globe, as the dialects of Hungary, Finland and Bohemia are in Europe at this day. History shows that wealth, power, science, literature, all follow in the train of numbers, general intelligence and freedom. The same causes which transferred the sceptre of civilization from the banks of the Euphrates and the Nile to Western Europe, must, in the course of no long period, carry it from the latter to the plains of the Mississippi and the Amazon. Society, after all, is in its infancy; the habitable world, when its productive powers are regarded, may be said hitherto to have been an untenanted waste. If any one suspects us of drawing on our fancy, we would request him to examine thoroughly the condition and past progress of the North American republic. Let him look at its amazing strides in wealth, intelligence and social improvements; at its indestructible liberty; and, above all, at the prodigious growth of its population; and let him answer the question to himself, what power can stop the tide of civilization which is pouring from this single source over an unoccupied world."

Albany, . .	24,238
Troy, . . .	11,405
Rochester,*. .	9,269
Buffalo, . . .	8,653
Utica, ...	8,323
Fishkill, . . .	8,292
Johnstown, .	7,700
Gates,*	7,484
Manlius, . . .	7,375
Poughkeepsie,	7,222
Salina, ...	6,929
Brighton,* . .	6,519
Newburgh, .	6,424
Hempstead, .	6,215
Seneca, ...	6,161
Bethlehem, . .	6,092
Brookhaven, .	6,095
Sempronius, .	5,705
Onondaga, . .	5,668
Huntington, .	5,582
Hudson, . . .	5,395
Ellisburgh, . .	5,292
Ithaca, ...	5,270
Hector, ...	5,212
Dryden, . . .	5,206
Oyster Bay, .	5,193
Canandaigua,	5,162
Schoharie, . .	5,146
New Paltz, . .	5,105
Lenox, ...	5,039
Warwick, . .	5,013

New Jersey.

Newark, . .	10,953
New Brunswick, . . .	7,831
Paterson, . . .	7,731

Pennsylvania.

Philadelphia,	167,811
Pittsburg, .	17,000
Lancaster, . .	7,704
Reading, . . .	5,859

Delaware.

Wilmington, .	6,628

Maryland.

Baltimore, .	80,625

District of Columbia.

Washington,	18,827
Georgetown,	8,441
Alexandria, .	8,263

Virginia.

Richmond, .	16,060
Norfolk, . . .	9,816
Petersburg, .	8,322
Wheeling, . .	5,221

South Carolina.

Charleston,	30,289

Georgia.

Savannah, . .	7,303
Augusta, . . .	6,696

Louisiana.

New Orleans,	46,310

Tennessee.

Nashville, . .	5,566

Kentucky.

Louisville, .	10,352
Lexington, . .	6,104

Ohio.

Cincinnati (1831),	28,014

Missouri.

St. Louis, . .	5,852

There are a number of towns described in the early volumes of this work, which were printed before the census of 1830 was taken. We take this opportunity to give their population according to that census, with that of a few in later volumes.

Andover, Mass., ...	4,540
Annapolis, Md., ...	2,623
Athens, Ohio, ...	729
Augusta, Me., ...	3,980
Ballston Spa, N. Y., . . .	2,113
Bennington, Vt., ...	3,419
Brighton, Mass., ...	972
Brunswick, Me., ...	3,747
Burlington, Vt., ...	3,526
Carlisle, Penn., ...	2,523
Castine, Me., ...	1,155
Chillicothe, Ohio, ...	2,846
Cleveland, Ohio, ...	1,076
Columbia, S. C., ...	3,310
Columbus, Ohio, ...	2,437
Concord, N. H., ...	3,727
Crown Point, N. Y., ...	2,041
Detroit, Michigan, ...	2,222
Dover, Del., ...	3,416
Fayetteville, N. C., ...	2,868
Frankfort, Ky., ...	1,680
Frederick, Md., ...	4,427
Fredericksburg, Va., ...	3,307
Germantown, Penn., ...	4,642
Guilford, Conn., ...	2,344
Hagerstown, Md., ...	3,371
Hanover, N. H., ...	2,361
Indianapolis, Ind., ...	1,200
Lebanon, New, N. Y., . . .	2,695
Lexington, Mass., ...	1,541
Litchfield, Conn., ...	4,458

There are in the U. States 205 towns with a population of upwards of 3000 and less than 5000 inhabitants, 64 with upwards of 5,000 and less than 10,000, and 20 with upwards of 10,000.

3. *Commerce, Manufactures, Agriculture,* and *Mechanic Arts.*—We have already treated, at considerable length, of the commerce and agriculture of the U. States, in the articles *Commerce of the World, Agriculture,* and *Horticulture,* to which we refer the reader for further information on these subjects. The following tables will serve to show, in some degree, the progress of the commerce of the country, and the nature of the articles exported and imported.

Commerce of the Colonies.

	Exports to G. Britain.	Imports from G. Britain.
1701, ...	£309,136	£343,828
1710, ...	249,816	293,662
1720, ...	468,190	319,705
1730, ...	662,586	536,862
1740, ...	718,418	813,384
1750, ...	804,770	1,313,076
1760, ...	761,101	2,611,766
1770, ...	1,015,538	3,725,575
1773, ...	1,369,232	1,979,416

It should be remarked, in regard to this table, that there was a very active trade kept up with other countries by the colonies, though prohibited by the navigation laws of Great Britain.

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* The village of Rochester is situated in the townships of Gates and Brighton.

Estimated Value of the Domestic and Foreign Produce exported from the U. States to Foreign Countries, during each Year, from 1790 *to* 1830; *each Year ending on the 30th September.*

Year.	Articles, the Growth, Produce or Manufacture of the U. States.	Articles, the Growth, Produce or Manufacture of Foreign Countries re-exported.	Total Value of the Exports from the U States.
	Dollars.	*Dollars.*	*Dollars.*
1790			20,205,156
1791			19,012,041
1792			20,753,098
1793			26,109,572
1794			33,026,233
1795			47,989,472
1796	40,764,097	26,300,000	67,064,079
1797	29,850,206	27,000,000	56,850,206
1798	28,527,097	33,000,000	61,527,097
1799	33,142,522	45,523,000	78,665,522
1800	31,840,903	49,130,877	70,971,780
1801	47,473,204	46,642,721	94,115,925
1802	36,708,189	35,774,971	72,483,160
1803	42,205,961	13,594,072	55,800,033
1804	41,467,477	36,231,597	77,699,074
1805	42,387,002	53,179,019	95,566,021
1806	41,253,727	60,283,236	101,536,963
1807	48,699,592	59,643,558	108,843,150
1808	9,433,546	12,997,414	22,430,960
1809	31,405,702	20,797,531	52,203,233
1810	42,366,675	24,391,295	66,757,970
1811	45,294,043	16,022,790	61,316,833
1812	30,032,109	8,495,127	38,527,236
1813	25,008,152	2,847,845	27,855,997
1814	6,782,272	145,169	6,927,441
1815	45,974,403	6,583,350	52,557,753
1816	64,781,896	17,138,556	81,920,452
1817	68,313,500	19,358,069	82,671,569
1818	73,854,437	19,426,696	93,281,133
1819	50,976,838	19,165,683	70,142,521
1820	51,683,640	18,008,029	69,691,669
1821	43,671,894	21,302,488	64,974,328
1822	49,874,079	22,286,202	72,160,281
1823	47,155,408	27,543,622	74,699,030
1824	50,649,500	25,337,157	75,986,657
1825	66,944,745	32,590,643	99,535,388
1826	53,055,710	24,539,612	77,595,322
1827	58,921,691	23,403,136	82,324,827
1828	50,921,669	21,595,017	72,516,786
1829	55,700,193	16,658,478	72,358,671
1830	59,462,029	14,387,479	73,849,508

The following statement for the year 1831 shows the nature of the domestic exports:

Summary Statement of the Value of the Exports of the Growth, Produce and Manufacture of the U. States, during the Year commencing on the 1st of October, 1830, *and ending on the 30th of September,* 1831.

THE SEA.

Fisheries—

Dried fish, or cod fisheries,	$625,393
Pickled fish, or river fisheries, —herring, shad, salmon, mackerel,	304,441
Whale and other fish oil,	554,440
Spermaceti oil,	53,526
Whalebone,	133,842
Spermaceti candles,	217,830

THE FOREST.

Skins and furs,	750,938
Ginseng,	115,928

Product of Wood—

Staves, shingles, boards, and hewn timber,	1,467,065
Other lumber,	214,105
Masts and spars,	7,806
Oak bark and other dye-stuffs,	99,116
All manufactures of wood,	275,219
Naval stores, tar, pitch, rosin, and turpentine,	397,687
Ashes, pot and pearl,	935,613

AGRICULTURE.

Product of Animals—

Beef, tallow, hides, and horned cattle,	829,982
Butter and cheese,	264,796
Pork (pickled), bacon, lard, live hogs,	1,501,654
Horses and mules,	218,015
Sheep,	14,499

Vegetable Food—

Wheat,	523,270
Flour,	9,938,458
Indian corn,	396,617
Indian meal,	595,434
Rye meal,	71,881
Rye, oats, and other small grain and pulse,	132,717
Biscuit, or ship bread,	250,533
Potatoes,	41,147
Apples,	31,148
Rice,	2,016,267

Tobacco,	4,892,388
Cotton,	25,289,492
Flaxseed,	216,376
Hops,	26,664
Brown sugar,	10,105

MANUFACTURES.

Soap, and tallow candles,	$643,252
Leather, boots and shoes,	290,937
Household furniture,	229,231
Coaches and other carriages,	49,490
Hats,	353,013
Saddlery,	39,440
Wax,	114,017
Spirits from grain, beer, ale, and porter,	141,794
Snuff and tobacco,	292,475
Lead,	7,068
Linseed oil and spirits turpentine,	54,092
Cordage,	6,109
Iron, pig, bar, and nails,	62,376
—— castings,	21,827
——, all manufactures of,	149,438
Spirits from molasses,	34,569
Sugar, refined,	215,794
Chocolate,	1,965
Gunpowder,	102,033
Copper and brass,	55,755
Medicinal drugs,	104,760

Cotton Goods—	
Printed or colored,	96,931
White,	947,932
Nankeens,	2,397
Twist, yarn, and thread,	17,221
All other manufactures of,	61,832

Flax and Hemp—	
Cloth and thread,	231
Bags, and all manufactures of,	2,599

Wearing apparel,	59,749
Combs and buttons,	120,217
Brushes,	3,947
Billiard tables and apparatus,	2,343
Umbrellas and parasols,	29,580
Leather and morocco skins, not sold per lb.	58,146
Printing presses and type,	8,713
Musical instruments,	10,906
Books and maps,	35,609
Paper and other stationery,	55,121
Paints and varnish,	22,022
Vinegar,	$7,178
Earthen and stone ware,	7,378
Fire engines and apparatus,	5,630
Manufactures of glass,	102,736
———— of tin,	3,909
———— of pewter and lead,	6,422
———— of marble and stone,	3,588
———— of gold and silver, and gold leaf,	3,464
Gold and silver coin,	2,058,474
Artificial flowers and jewelry,	11,439
Molasses,	948
Trunks,	5,326
Brick and lime,	4,412
Salt,	26,848

ARTICLES NOT ENUMERATED.

Manufactured,	394,681
Other articles,	715,311

RECAPITULATION.

Products of the sea,	1,889,472
———— forest,	4,263,477
———— agriculture,	47,261,433
Manufactures,	6,752,683
Articles not enumerated,	1,109,992
Total,	61,277,057
Deduct gold and silver coin,	2,058,474
Total produce and manufacture of the U. States,	$59,218,583

The exports of foreign produce for the same period amounted to $20,033,526.

Value of Merchandise imported into the U. States from 1821 *to* 1830.

1821,	$62,585,724
1823,	77,579,267
1825,	96,340,075
1827,	79,484,068
1829,	74,492,527
1830,	70,876,920

In 1831, the value of imports was $103,191,124; of exports, as above given, $81,310,583.

American and Foreign Tonnage employed in the Coasting, Foreign and Fishing Trade, from 1790 *to* 1825.

	American Vessels.				*Foreign Vessels.*
	Foreign Trade.	Coasting Trade.	Fisheries.	Total.	
1790	354,767	103,775	28,348	486,890	106,654
1795	580,277	171,918	34,102	786,297	56,832
1800	682,871	228,496	26,439	937,806	121,403
1805	922,298	284,863	59,445	1,266,606	87,842
1810	908,713	324,037	31,491	1,264,241	80,316
1815	700,500	375,207	33,223	1,108,930	217,413
1820	801,253	660,370	69,423	1,531,406	78,859
1825	814,854	722,916	81,443	1,619,213	89,481

This table is that furnished by the records of the treasury department; but it appears that there was a slight misconception in regard to the real amount of the tonnage of the U. States until 1829, on account of an omission to deduct the losses, sales and condemnations for several years. The apparent aggregate of tonnage, without correction, for the year 1829, was 1,818,490; but the real aggregate, after making the correction, was 1,260,798 tons, of which 650,143 was employed in foreign trade, and 610,655 in coasting trade and fishery. In 1831, the amount of the tonnage is stated at 1,191,776, of which the registered tonnage was 576,475 tons, and the enrolled 615,301. The following remarks are from a report of a committee of the New York convention of friends of domestic industry (1831):—"The great improvements made in shipbuilding of late years, by combining the carriage of large burdens with fast sailing, have given this country a decided advantage over all others in the despatch of business; whence it may be inferred that the U. States gain in celerity, in the performance of effective duty, and the preference obtained in the freighting business, at least one fifth over their most judicious competitors (the British); so that it would not be extravagant to estimate the 1,260,798 tons of American shipping as equivalent, at one fifth gain, to 1,512,957 tons of that of other nations. It may be remarked here, that the magnitude and extent of the

Statistical View of the Commerce of the United States, exhibiting the Value of Imports from, and the Value of Articles of Export to, each Foreign Country; also the Tonnage of American and Foreign Vessels arriving from, and departing to, each Foreign Country, during the Year ending on the 30th Day of September, 1829.

COUNTRIES.	COMMERCE.			NAVIGATION.			
	VALUE OF IMPORTS.	VALUE OF EXPORTS.		TONNAGE.			
				American.		Foreign.	
		Domestic Produce.	Foreign Produce.	Entered U.States.	Departed U.States.	Entered U.States.	Departed U.States.
		Dollars.		Tons.			
Russia, ...	2,218,995	51,684	334,542	16,420	2,943	1,015	
Prussia, ...	22,935	14,411		389	188		
Sweden and Norway, . . .	1,020,910	122,663	126,971	13,453	2,255	2,000	1,114
Swedish West Indies, . . .	283,049	684,523	23,791	17,969	28,246	815	328
Denmark, ...	32,911	73,597	13,166		1,043		1,070
Danish West Indies, . . .	2,053,266	1,942,010	282,401	43,463	56,738	482	1,299
Netherlands, ...	1,057,854	3,095,857	889,330	24,453	38,372	1,649	4,951
Dutch East Indies, ...	121,348	62,074	176,318	907	1,985		
Dutch West Indies, ...	438,132	379,874	18,667	13,325	12,217	241	363
England, ...	23,892,763	21,281,334	1,767,457	169,207	179,843	61,011	60,722
Scotland, ...	1,024,215	895,315	19,493	2,275	2,609	9,908	7,699
Ireland, ...	362,511	327,728	366	6,113	4,833	6,185	2,502
Gibraltar, ...	247,471	301,132	160,130	5,718	8,701		
British African ports, . . .	7,787			116			
British East Indies, ...	1,229,569	69,070	477,629	3,173	3,050	676	
British West Indies, ...	240,224	1,463	5,058	32,777	5,418	317	
British American colonies,	577,542	2,724,104	40,805	88,492	93,645	4,409	10,569
Newfoundland, ...				125	179		
Hanse Towns, &c.	2,274,375	1,998,176	1,278,984	12,862	21,962	7,290	10,894
France on the Atlantic, . .	8,248,921	8,008,923	2,105,573	54,425	73,862	4,429	7,735
France on the Mediterranean	590,057	886,122	748,777	9,458	18,843		
French West Indies, . . .	777,992	1,056,639	15,768	40,516	65,019	9,344	4,317
Bourbon, ...		10,502					
Hayti, ...	1,799,809	814,987	160,171	21,370	18,164	3,205	2,988
Spain on the Atlantic, . . .	327,409	545,753	139,732	7,806	12,719	167	1,550

American bays, rivers and lakes call into existence two descriptions of boats, unknown in Europe, which navigate the Mississippi, Alabama, Tombigbee, and other large rivers of the west and south, with their tributary waters. These boats carry from thirty to fifty tons, and are to be seen in countless numbers on the Mississippi and Ohio especially, and are not licensed or noticed in the custom-house reports. By a conjectural estimate, they amount to from 150 to 200,000 tons. To these may be added the coal boats of the Susquehanna, Delaware, Lehigh, Schuylkill and Lackawaxen, which this year delivered 200,000 tons of coal at Philadelphia, Baltimore and New York. The coal trade employed last year 1172 coasting vessels, measuring 100,966 tons. The steam-boat tonnage is now 75,000 tons, having greatly increased within the last two years." Such, indeed, has been the rapid growth of manufactures, and the great developement of internal resources, that, while the foreign trade of the U States has been nearly stationary for a number of years, the coasting trade has steadily increased at a rapid pace: the country, in fact, forms a great island, surrounded by the Mississippi, the lakes and the ocean, intersected by navigable rivers and canals, and furnishing such a variety of natural productions as to afford, in miniature, a picture of the commerce of the world.

Spain on the Mediterranean,	474,120	185,952	45,700	8,270	4,516	179	
Canaries, ...	25,283	42,839	23,317	448	1,714		
Manilla and Philippine isles,	209,206	10,802	66,430	2,137	594		
Cuba, ...	4,866,524	3,719,263	1,859,626	99,779	114,599	11,848	8,120
Other Spanish West Indies,	898,832	209,780	38,900	19,179	11,051	337	216
Portugal, ...	237,351	42,088	628	23,570	2,397	562	
Madeira, ...	403,056	175,074	15,089	3,130	6,091	669	669
Fayal and other Azores, .	21,302	7,949	78	731	672	137	137
Cape de Verde islands, . .	26,460	68,528	13,477	1,310	3,268		83
Italy and Malta, ...	1,409,588	289,755	611,257	13,311	7,031	171	
Sardinia, ...				345			
Adriatic ports, ...	191,896	409,288	280,200	4,432	6,384		129
Turkey, Levant and Egypt,	293,237	27,600	47,384	2,797	687		
Morocco and Barbary states,	10,710			137			
Mexico, ...	5,026,761	495,626	1,835,525	20,352	21,682	3,415	4,719
Central republic of America,	311,931	123,631	116,223	3,435	3,320		
Honduras, Campeachy, &c.	64,847	12,693	8,229				
Colombia, ...	1,255,310	525,783	241,565	13,614	8,490	282	138
Brazil, ...	2,535,467	1,510,260	419,767	32,482	40,978		136
Cisalpine republic, ...	3,076						
Argentine republic, ...	912,114	444,716	181,336	5,860	7,422		109
Chile, ...	416,118	890,356	530,778	2,018	9,079		
Peru, ...	1,004,458	91,542	119,615	5,242	749		
South America, generally,	56,552	147,670	6,175	310	2,447		
Cape of Good Hope, . . .					165		
China, ...	4,680,847	260,759	1,094,103	8,052	6,351		
West Indies, generally, . .	3,314	359,496	10,123	725	10,926		91
Asia, generally, ...	66,191	40,721	232,768	1,170	3,751		
Europe, generally, ...	300	102,364	250	2,392	920		
Africa, generally, ...	211,735	108,837	49,516	2,865	2,369		358
South seas, ...	20,235	45,969	20,991	10,044	14,312		
North-west coast, ...		2,911	4,399				
Uncertain, ...	5,961						
Total, ...	74,492,527	55,700,193	16,658,478	872,949	944,799	130,743	133,006

(See *Internal Navigation*; *Rivers, Navigable*; and *Steam*.)

It has been the policy of the U. States, for the last seventeen years, to encourage domestic manufactures; and the tariffs of 1816, 1824, 1828 and 1832 have been constructed with reference to that principle. On the termination of the three years' war with Great Britain, in 1814, it was found that the restrictive system which had preceded it, and the necessities attending the war itself, had created and fostered a new and more extensive manufacturing interest than had before existed. The capital thus vested has been protected by heavy duties upon the importation of such articles, the produce of the manufactures of foreign countries, as would interfere with the permanent growth and stability of the manufacturing establishments thus brought into being. The cotton crop of the U. States at present amounts to 1,038,347 bales, or 376,000,000 lbs.: in 1816, it was 68,000,000 lbs. The number of cotton mills is 795, with 1,246,503 spindles, and 33,506 looms, producing annually 230,461,990 yards of cloth, consuming 77,757,316 lbs. of cotton, and employing 18,539 men, 38,927 women, and 4691 children under twelve years of age: annual value of manufactured articles, $26,000,000: the quantity of cotton goods printed is estimated at 40,000,000 yards: about one third of the goods manufactured are bleached: the number of hand-weavers is not more than 5000. (See *Cotton Manufacture.*) The number of sheep is estimated at 20,000,000, producing 50,000,000 lbs. of wool annually; value of cloth manufactured, $40,000,000; persons employed, 50,000. Of glass, porcelain, and other manufactures in clay, there are annually produced articles to the value of about $3,000,000, the manufacture of which employs 2140 persons. The annual value of the paper manufactured is estimated at $7,000,000; of chemical articles used in manufactures, about $1,000,000, in 30 chemical establishments. Hats and caps are manufactured to the value of $10,500,000, occupying 18,000 laborers. Cabinet ware manufactured to the annual value of $10,000,000, employing 15,000 workmen. Of iron were made, in 239 furnaces, in 1830, 191,536 tons,* converted into 112,866 tons of bar-iron, and 28,273 tons of castings, which give an aggregate value of $13,329,760, employing 29,254 hands. Quantity of salt manufactured, 4,444,929 bushels (besides which 5,901,157 bushels were imported during 1831, chiefly from Great Britain). Lead, from U. States mines at Fever river and in Missouri, in 1830, 14,541,310 lbs. (in 1831, the quantity was only 6,449,080 lbs.). Sugar, from the cane, 100,000,000 lbs. (with 5,000,000 gallons of molasses), the whole consumption of the country being 176,000,000: 150 steam-engines are employed on the sugar plantations; and there are about 40 sugar refineries in the U. States. The inspections of flour and meal for 1831 give the following results: 3,117,112 bbls. wheat flour, 37,399 bbls. rye flour, 17,337 hhds. and 56,496 bbls. of Indian corn meal. The whale fishery employed, in 1831, 102,500 tons of shipping, yielding 110,000 bbls. of sperm oil, and 115,000 bbls. of whale oil, with 100,000 lbs. of whalebone: about 2,500,000 lbs. of sperm candles are manufactured: the annual product of the whale fishery is about $3,500,000. (See *Whale Fishery.*) Within a few years, the consumption of coal for fuel has greatly increased in this country; and the anthracite coal, which is found on the eastern side of the Alleghanies, has been much used for this purpose: in 1820, the quantity mined was 365 tons of 28 bushels; in 1823, 5823; in 1826, 48,047; in 1830, 174,925. In 1824, gold to the value of $5000, the product of the Southern States,† was received at the mint of the U. States; in 1830, $466,000, and in 1831, $496,000, from the same source. The whole annual value of the produce of the commerce, manufactures and agriculture of the U. States has been estimated at from 1,200,000,000 to $1,500,000,000. An inspection of the table of articles of domestic growth and manufactures exported in 1831, will give some indications on this subject.

4. *Constitution, Administration, Finances.* The government of the U. States is a representative democracy, in which the people intrust the administration of affairs to executive and legislative officers of their choice. The powers of these officers are strictly defined by a written act, the constitution, which was framed by the people, through their delegates, adopted

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* Erroneously stated, in our article *Iron*, at 50,000 tons.

† The gold region extends from the Potomac into Alabama; and gold has also been recently found in Tennessee. There are, at present, about 20,000 laborers employed, partly in washings and partly in mines. The whole value of the gold produced has been estimated at $5,000,000 annually, which is chiefly exported to Europe, where gold bears a higher price, in proportion to silver, than in the U. States. It is also said that there are proofs of these mines having been formerly worked, pieces of machinery and crucibles, much superior to the Hessian crucibles now in use, having been found there.

by them, and can be altered only by them. The confederation consists of a number of states, united together so as to form a federal republic, in which each state reserves its internal legislation, and leaves to the representatives of the whole people, in general congress, the adjustment of the relative claims of the members; the levying, direction and government of the common force of the confederation; the requisition of subsidies for the support of this force; the making of peace and war; the entering into treaties; the regulation of commerce, &c. The government rests on the basis of a full, fair and equal representation, the elective franchise being nearly universal. (See our articles *Constitution of the United States*, *Congress of the United States*, *President of the United States*, *Courts of the United States*, and *Elections*.) In the executive administration of the government, the president is assisted by the several heads of departments, who hold their offices at his will. 1. The department of state was created by an act of congress of Sept. 15, 1789: by a previous act of July 27, 1789, it was denominated the "department of foreign affairs;" and it embraces what, in other governments, are styled the "department of foreign affairs" and the "home department." The secretary of state conducts the making of all treaties between the U. States and foreign powers, and corresponds officially with the public ministers of the U. States at foreign courts, and with the ministers of foreign powers resident in the U. States. He is intrusted with the publication and distribution of all the acts and resolutions of congress, and of all treaties with foreign powers and Indian tribes; preserves the originals of all laws and treaties, and of the public correspondence growing out of the intercourse between the U. States and foreign nations; is required to procure and preserve copies of the statutes of the several states; grants passports to American citizens visiting foreign countries; preserves the evidence of copyrights, and has control of the office which issues patents for useful inventions. He has the charge of the seal of the U. States, but cannot affix it to any commission, until signed by the president, nor to any act or instrument, without the special authority of the president. 2. The treasury department was created by an act of congress of Sept. 2, 1789. The secretary of the treasury superintends all the fiscal concerns of the government, and, upon his own responsibility, recommends to congress measures for improving the condition of the revenue. All the accounts of the government are finally settled at the treasury department; and, for this purpose, it is divided into the office of the secretary (who has a general superintendence of the whole), the offices of the two controllers, five auditors, a treasurer, a register, and a solicitor. The first auditor receives all accounts in relation to the revenue and civil list; the second and third, those relating to the army, fortifications, and the Indian department; the fourth, those relative to the navy department; the fifth, those connected with the department of state, the post-office, light-houses, &c. The first controller examines the accounts settled by the first and fifth auditors; the second, those of the other three auditors. The following tables will show the amount of the revenue, and the mode of raising it. The two sources of revenue are duties on imports, and the sale of public lands. The internal duties (on spirits, sugar, licenses, &c.) which had previously existed, and the direct tax on lands, houses and slaves, imposed in 1798, were abolished in 1802. In 1813, direct taxes and internal duties (on licenses, carriages, sales by auction, &c.) were again laid, in consequence of the increased expenditure arising from the war, and the diminution of the revenue on imports from foreign countries. The acts imposing these taxes were repealed soon after the war, and the two sources of revenue first mentioned have been amply sufficient to meet the expenses of the government, and to pay off the public debt.

RECEIPTS OF THE UNITED STATES,

As stated in a Letter from the Secretary of the Treasury

Years. From March 4, 1789, to	Customs.	Internal Revenue.	Direct Taxes.	Postage.	
Dec. 31, 1791	$4,399,473 09	. .	.	. .	1
" " 1792	3,443,070 85	$208,942 81	.	. .	2
" " 1793	4,255,306 56	337,705 70	. .	$11,020 51	3
" " 1794	4,801,065 28	274,089 62	.	29,478 49	4
" " 1795	5,588,461 26	337,755 36	. .	22,400 00	5
" " 1796	6,567,987 94	475,289 60	. .	72,909 84	6
" " 1797	7,549,649 65	575,491 45	. .	64,500 00	7
" " 1798	7,106,061 93	644,357 05	. .	39,500 00	8
" " 1799	6,610,449 31	779,136 44	. .	41,000 00	9
" " 1800	9,080,932 73	809,396 53	$734,223 97	78,000 00	10
" " 1801	10,750,778 93	1,048,033 43	534,343 38	79,500 00	11
" " 1802	12,438,235 74	621,898 89	206,565 44	35,000 00	12
" " 1803	10,479,417 61	215,179 69	71,879 20	16,427 26	13
" " 1804	11,098,565 33	50,941 29	50,198 44	26,500 00	14
" " 1805	12,936,487 04	21,747 15	21,883 91	21,342 50	15
" " 1806	14,667,698 17	20,101 45	55,763 86	41,117 67	16
" " 1807	15,845,521 61	13,051 40	34,732 56	3,614 73	17
" " 1808	16,363,550 58	8,210 73	19,159 21	. .	18
" " 1809	7,296,020 58	4,044 39	7,517 31	. .	19
" " 1810	8,583,309 31	7,430 63	12,448 68	. .	20
" " 1811	13,313,222 73	2,295 95	7,666 66	37 70	21
" " 1812	8,958,777 53	4,903 06	859 22	85,039 70	22
" " 1813	13,224,623 25	4,755 04	3,805 52	35,000 00	23
" " 1814	5,998,772 08	1,662,984 82	2,219,497 36	45,000 00	24
" " 1815	7,282,942 22	4,678,059 07	2,162,673 41	135,000 10	25
" " 1816	36,306,874 88	5,124,708 31	4,253,635 09	149,787 74	26
" " 1817	26,283,348 49	2,678,100 77	1,834,187 04	29,371 91	27
" " 1818	17,176,385 00	955,279 20	264,333 36	20,070 00	28
" " 1819	20,283,608 76	229,593 63	83,650 78	71 32	29
" " 1820	15,005,612 15	106,260 53	31,586 82	6,465 95	30
" " 1821	13,004,447 15	69,027 63	29,349 05	516 91	31
" " 1822	17,589,761 94	67,665 71	20,961 56	602 04	32
" " 1823	19,088,433 44	34,242 17	10,337 71	110 69	33
" " 1824	17,878,325 71	34,663 37	6,201 96	. .	34
" " 1825	20,098,713 45	25,771 35	2,330 85	469 56	35
" " 1826	23,341,331 77	21,589 93	6,638 76	300 14	36
" " 1827	19,712,283 29	19,885 68	2,626 90	101 00	37
" " 1828	23,205,523 64	17,451 54	2,218 81	20 15	38
" " 1829	22,681,965 91	14,404 74	11,321 29	. .	39
	520,296,996 89	22,204,438 03	12,702,597 11	1,090,275 91	

FROM MARCH 4, 1789, TO DECEMBER 31, 1829,

to the Chairman of the Committee on Retrenchment, April 9, 1830.

	Public Lands.	Loans and Treasury Notes, &c.	Dividends and Sales of Bank Stock and Bonds.	Miscellaneous.	Total.
1	. .	$5,791,112 56	. .	$19,440 10	$10,210,025 75
2	. .	5,070,806 46	$8,028 00	9,918 65	8,740,766 77
3	. .	1,067,701 14	38,500 00	10,390 37	5,720,624 28
4	. .	4,609,196 78	303,472 00	23,799 48	10,041,101 65
5	. .	3,305,268 20	160,000 00	5,917 97	9,419,802 79
6	$4,836 13	362,800 00	1,240,000 00	16,506 14	8,740,329 65
7	83,540 60	70,135 41	385,220 00	30,379 29	8,758,916 40
8	11,963 11	308,574 27	79,920 00	18,692 81	8,209,070 07
9	. .	5,074,646 53	71,040 00	45,187 56	12,621,459 84
10	443 75	1,602,435 04	71,040 00	74,712 10	12,451,184 14
11	167,726 06	10,125 00	88,800 00	266,149 15	12,945,455 95
12	188,628 02	5,597 36	1,327,560 00	177,905 86	15,001,391 31
13	165,675 69	. .	. .	115,518 18	11,064,097 63
14	487,526 79	9,532 64	.	112,575 53	11,835,840 02
15	540,193 80	128,814 94	.	19,039 80	13,689,508 14
16	765,245 73	48,897 71	. .	10,004 19	15,608,823 78
17	466,163 27	. .	. .	34,935 69	16,398,019 26
18	647,939 06	1,822 16	. .	21,802 35	17,062,544 09
19	442,252 33	. .	. .	23,638 51	7,773,473 12
20	696,548 82	2,759,992 25	. .	84,476 84	12,144,206 53
21	1,040,237 53	8,309 05	. .	60,068 52	14,431,838 14
22	710,427 78	12,837,900 00	. .	41,125 47	22,639,032 76
23	835,685 14	26,184,435 00	. .	236,571 00	40,524,844 95
24	1,135,971 09	23,377,911 79	. .	119,399 81	34,559,536 95
25	1,287,959 28	35,264,320 78	. .	150,282 74	50,961,237 60
26	1,717,985 03	9,494,436 16	. .	123,994 61	57,171,421 82
27	1,991,226 06	734,542 59	202,426 30	80,389 17	33,833,592 33
28	2,606,564 77	8,765 62	525,000 00	37,547 71	21,593,936 66
29	3,274,422 78	2,291 00	675,000 00	57,027 10	24,605,665 37
30	1,635,871 61	3,040,824 13	1,000,000 00	54,872 49	20,881,493 68
31	1,212,966 46	5,000,324 00	105,000 00	152,072 52	19,573,703 72
32	1,803,581 54	. .	297,500 00	452,355 15	20,232,427 94
33	916,523 10	. .	350,000 00	141,019 15	20,540,666 26
34	984,418 15	5,000,000 00	350,000 00	127,603 60	24,381,212 79
35	1,216,090 56	5,000,000 00	367,500 00	129,982 25	26,840,858 02
36	1,393,785 09	. .	402,500 00	94,288 52	25,260,434 21
37	1,495,845 26	. .	420,000 00	1,315,621 83	22,966,363 96
38	1,018,308 75	. .	455,000 00	65,106 34	24,763,629 23
39	1,457,004 66	. .	490,000 00	112,425 62	24,767,122 22
	32,403,527 80	156,181,578 57	9,413,506 30	4,672,744 17	758,965,664 78

EXPENDITURE OF THE UNITED STATES,

As stated in a Letter from the Secretary of the Treasury to the

Years. From March 4, 1789, to	Civil List.	Foreign Intercourse.	Miscellaneous.	Public Debt.	Naval Establishment.	
Dec. 31, 1791	$757,134 45	$14,733 33	$311,533 83	$5,287,949 50	$570 00	1
" " 1792	380,917 58	78,766 67	194,572 32	7,263,665 99	53 02	2
" " 1793	358,241 08	89,500 00	24,709 46	5,819,505 29	. .	3
" " 1794	440,946 58	146,403 51	118,248 30	5,801,578 09	61,408 97	4
" " 1795	361,633 36	912,685 12	92,718 50	6,084,411 61	410,562 03	5
" " 1796	447,139 05	184,859 64	150,476 14	5,835,846 44	274,784 04	6
" " 1797	483,233 70	669,788 54	103,880 82	5,792,421 82	382,631 89	7
" " 1798	504,605 17	457,428 74	149,004 15	3,990,294 14	1,381,347 76	8
" " 1799	592,905 76	271,374 11	175,111 81	4,596,876 78	2,858,081 84	9
" " 1800	748,688 45	395,288 18	193,636 59	4,578,369 95	3,448,716 03	10
" " 1801	549,288 31	295,676 73	269,803 41	7,291,707 04	2,111,424 00	11
" " 1802	596,981 11	550,925 93	315,022 36	9,539,004 76	915,561 87	12
" " 1803	526,583 12	1,110,834 77	205,217 87	7,256,159 43	1,215,230 53	13
" " 1804	624,795 63	1,186,655 57	379,558 23	8,171,787 45	1,189,832 75	14
" " 1805	585,849 79	2,798,028 77	384,720 19	7,369,889 79	1,597,500 00	15
" " 1806	684,230 53	1,760,421 30	445,485 18	8,989,884 61	1,649,641 44	16
" " 1807	655,524 65	577,826 34	464,546 52	6,307,720 10	1,722,064 47	17
" " 1808	691,167 80	304,992 83	427,124 98	10,260,245 35	1,884,067 80	18
" " 1809	712,465 13	166,306 04	337,032 62	6,452,554 16	2,427,758 80	19
" " 1810	703,994 03	81,367 48	315,783 47	8,008,904 46	1,654,244 20	20
" " 1811	644,467 27	264,904 47	457,919 66	8,009,204 05	1,965,566 39	21
" " 1812	826,271 55	347,703 29	509,113 37	4,449,622 45	3,959,365 15	22
" " 1813	780,545 45	209,941 01	738,949 15	11,108,128 44	6,446,600 10	23
" " 1814	927,424 23	177,179 97	1,103,425 50	7,900,543 94	7,311,290 60	24
" " 1815	852,247 16	290,892 04	1,755,731 27	12,628,922 35	8,660,000 25	25
" " 1816	1,208,125 77	364,620 40	1,416,995 00	24,871,062 93	3,908,278 30	26
" " 1817	994,556 17	281,995 97	2,242,384 62	25,423,036 12	3,314,598 49	27
" " 1818	1,109,559 79	420,429 90	2,305,849 82	21,296,201 62	2,953,695 00	28
" " 1819	1,142,180 41	284,113 94	1,640,917 06	7,703,926 29	3,847,640 42	29
" " 1820	1,248,310 05	253,370 04	1,090,341 85	8,628,494 28	4,387,990 00	30
" " 1821	1,112,292 64	207,110 75	903,718 15	8,367,093 62	3,319,243 06	31
" " 1822	1,158,131 58	164,879 51	644,985 15	7,848,949 12	2,224.458 98	32
" " 1823	1,058,911 65	292,118 56	671,063 78	5,530,016 41	2,503,765 83	33
" " 1824	1,336,266 24	5,140,099 83	678,942 74	16,568,393 76	2,904,581 56	34
" " 1825	1,330,747 24	371,666 25	1,046,131 40	12,095,344 78	3,049,083 86	35
" " 1826	1,256,745 48	232,719 08	1,110,713 23	11,041,082 19	4,218,902 45	36
" " 1827	1,228,141 04	659,211 87	826,123 67	10,003,668 39	4,263,877 45	37
" " 1828	1,455,490 58	1,001,193 66	1,219,368 40	12,163,438 07	3,918,786 44	38
" " 1829	1,323,966 86	207,060 35	1,570,656 66	12,383,800 77	3,312,931 87	39
	32,400,706 44	23,225,074 49	26,991,517 23	362,719,701 34	101,656,137 64	

FROM MARCH 4, 1789, TO DECEMBER 31, 1829,

Chairman of the Committee on Retrenchment, April 9, 1830.

	MILITARY ESTABLISHMENT.					
	Military Services, including Fortifications, Arsenals, Armories, Ordnance, Internal Improvements, &c.	Revolutionary Pensions.	Other Pensions.	Indian Department.	Total.	Balances in the Treasury at the End of each Year.
1	$632,804 03	· ·	$175,813 88	$27,000 00	$7,207,539 02	$973,905 75
2	1,100,702 09	· ·	109,243 15	13,648 85	9,141,569 67	783,444 51
3	1,130,249 08	· ·	80,087 81	27,282 83	7,529,575 55	753,661 69
4	2,639,097 59	· ·	81,399 24	13,042 46	9,302,124 74	1,151,924 17
5	2,480,910 13	· ·	68,673 22	23,475 68	10,435,069 65	516,442 61
6	1,260,263 84	· ·	100,843 71	113,563 98	8,367,776 84	888,995 42
7	1,039,402 66	· ·	92,256 97	62,396 38	8,626,012 78	1,021,899 04
8	2,009,522 30	· ·	104,845 33	16,470 09	8,613,517 68	617,451 43
9	2,466,946 98	· ·	95,444 03	20,302 19	11,077,043 50	2,161,867 77
10	2,560,878 77	· ·	64,130 73	31 22	11,989,739 92	2,623,311 99
11	1,672,944 08	· ·	73,533 37	9,000 00	12,273,376 94	3,295,391 00
12	1,179,148 25	· ·	85,440 39	94,000 00	13,276,084 67	5,020,697 64
13	822,055 85	· ·	62,902 10	60,000 00	11,258,983 67	4,825,811 60
14	875,423 93	· ·	80,092 80	116,500 00	12,624,646 36	4,037,005 26
15	712,781 28	· ·	81,854 59	196,500 00	13,727,124 41	3,999,388 99
16	1,224,355 38	· ·	81,875 53	234,200 00	15,070,093 97	4,538,123 80
17	1,288,685 91	· ·	70,500 00	205,425 00	11,292,292 99	9,643,850 07
18	2,900,834 40	·	82,576 04	213,575 00	16,764,584 20	9,941,809 96
19	3,345,772 17	· ·	87,833 54	337,503 84	13,867,226 30	3,848,056 78
20	2,294,323 94	· ·	83,744 16	177,625 00	13,319,986 74	2,672,276 57
21	2,032,828 19	· ·	75,043 88	151,875 00	13,601,808 91	3,502,305 80
22	11,817,798 24	· ·	91,402 10	277,845 00	22,279,121 15	3,862,217 41
23	19,652,013 02	· ·	86,989 91	167,358 28	39,190,520 36	5,196,542 00
24	20,350,806 86	· ·	90,164 36	167,394 86	38,028,230 32	1,727,848 65
25	14,794,294 22	· ·	69,656 06	530,750 00	39,582,493 35	13,106,592 88
26	16,012,096 80	· ·	188,804 15	274,512 16	48,244,495 51	22,033,519 19
27	8,004,236 53	· ·	297,374 43	319,463 71	40,877,646 04	14,989,465 48
28	5,622,715 10	$300,000 00	590,719 90	505,704 27	35,104,875 40	1,478,526 74
29	6,506,300 37	1,847,900 85	568,039 00	463,181 39	24,004,199 73	2,079,992 38
30	2,630,392 31	2,766,440 00	441,936 31	315,750 01	21,763,024 85	1,198,461 21
31	4,461,291 78	· ·	242,817 25	477,005 44	19,090,572 69	1,681,592 24
32	3,111,981 48	1,642,590 94	305,608 46	575,007 41	17,676,592 63	4,237,427 55
33	3,096,924 43	1,449.097 04	331,491 48	380,781 82	15,314,171 00	9,463,922 81
34	3,340,939 85	1,267,600 41	231,726 18	429,987 90	31,898,538 47	1,946,597 13
35	3,659,914 18	1,308,810 57	· ·	724,106 44	23,585,804 72	5,201,650 43
36	3,943,194 37	1,305,194 82	251,399 01	743,447 83	24,103,398 46	6,358,686 18
37	3,938,977 88	796,012 52	180,126 34	760,624 88	22,656,765 04	6,668,286 10
38	4,145,544 56	723,134 80	127,438 77	705,084 24	25,459,479 52	5,972,435 81
39	4,730,605 03	767,492 38	185,344 26	589,159 41	25,071,017 59	5,668,540 44
	175,489,957 86	14,174,274 33	6,119,172 44	10,520,582 57	753,297,124 34	

The receipts into the treasury during the year 1830 were $24,844,116; balance remaining from past year, $5,668,540; expenditures, $24,585,281; as follows:

Receipts.

Customs, ...	21,922,391
Lands, ...	2,329,356
Dividends on bank stock, . .	490,000
Incidental receipts, ...	102,000

Expenditures.

Civil list, foreign intercourse, &c.	3,237,416
Military, including fortifications, internal improvements, &c.,	6,752,688
Naval service, ...	3,239,428
Debt, ...	11,355,748

The receipts for 1832 are estimated at $30,100,000; of which it is estimated that $26,500,000 will be raised by the customs, and $3,000,000 from the sale of public lands. The expenditure for 1832, for all objects other than the public debt, is estimated at $13,365,202; which will leave a balance of $16,734,797 in the treasury. The following statement exhibits a view of the public debt of the U. States from the period of the adoption of the constitution to the present time. The debt created by the revolutionary war amounted to forty-two millions of dollars, and the debt contracted by each individual state was assumed by the U. States on the organization of the new government. This debt was to be redeemed by the proceeds of the national domains, and the interest of several species of stock, under the direction of the commissioners of the sinking fund.

Years.	Amount of Debt.
1791, ...	$75,169,974
1801, ...	82,000,167
1804, ...	85,353,643
1812, ...	45,035,123
1816, ...	123,016,375
1820, ...	91,015,566
1822, ...	93,546,676
1825, ...	83,788,432
1826, ...	81,054,059
1827, ...	73,987,357
1828, ...	67,475,222
1829, ...	58,362,135
1830, ...	48,565,405

According to the report of the secretary of the treasury (Dec. 17, 1831), the amount of the public debt on the first of January, 1832, would be $24,322,235, of which $14,019,548 would be paid (exclusive of interest) in 1832, leaving, at the close of the year, an amount of $10,302,686, or, exclusive of bank stock, $2,302,686, which may be paid off in March, 1833, leaving the government without debt. "The moral influence," says the secretary, "which such an example would necessarily produce, in removing apprehension and inspiring new confidence in our free institutions, cannot be questioned. Seventeen years ago, the country emerged from an expensive war, encumbered with a debt of more than one hundred and twenty-seven millions, and in a comparatively defenceless state. In this period it has repealed all direct and internal taxes which were imposed during the war, relying mainly upon revenue derived from imposts and sales of the public domain. From these sources, besides providing for the general expenditure, the frontier has been extensively fortified, the naval and maritime resources strengthened, and part of the debt of gratitude to the survivors of the revolutionary war discharged. We have, moreover, contributed a large share to the general improvement, added to the extent of the Union, by the purchase of the territory of Florida,[*] and finally acquired the means of extinguishing the heavy debt incurred in sustaining the late war, and all that remained of the debt of the revolution." In order to adapt the revenue to the reduced expenditure, the new tariff of 1832 provides for the admission of tea, coffee, and some other articles, free of duty. (See *Public Stocks.*) In 1812, a general land office was established, in which all patents of land are made out and recorded. This office is a subordinate branch of the treasury department. (See *Public Lands.*) By the report of the director of the mint in 1832, the operations of that office for 1831 were as follows: Amount of coinage, $3,923,473, comprising $714,270 in gold coins, $3,175,600 in silver coins, and $33,603 in copper coins, making together 11,792,284 pieces: of the gold coined, $26,000 worth was from Virginia, $294,000 from North Carolina, and $176,000 from Georgia. The total value of the coinage from 1792 to 1831 is $40,000,000.—3. The war department was created, by act of congress, Aug. 7, 1789, and at first embraced not only military but naval affairs. The secretary at war superintends every branch of military affairs, and has under his immediate direction a requisition bureau, a bounty land office, a pension bureau, a bureau of

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[*] Five millions were paid for the purchase of Florida (1821), and fifteen for that of Louisiana (1803).

Indian affairs, an engineer office, an ordnance office, an office for the commissary general of subsistence, a paymaster-general's office, and a surgeon-general's office. This department has the superintendence of the erection of fortifications, of making topographical surveys, of surveying and leasing the national lead mines, and of the intercourse with the Indian tribes. The military peace establishment of the U. States was fixed, by act of congress of March 2, 1821, at 6000 men. The army, as organized according to this law, is under the command of one major-general, and two brigadier-generals. It consists of four regiments of artillery (2240 men), and seven regiments of infantry (3829 men). This might be increased to 12,000 men without a proportionate increase of the expenses in the war department, the number of privates being reduced as low as possible, while the officers are kept up on a scale adapted for thrice the effective numerical force; by which arrangement the general expenses are diminished in time of peace, and a sufficient number of officers are in readiness on the breaking out of war. This circumstance, and that of the high price of labor in the U. States, render the expenses of the military peace establishment much greater in proportion than those of the European powers. It appears, from the report of the secretary of war (Dec., 1831), that the U. States now have, in serviceable condition, 465,000 muskets. The annual demand to supply the necessary loss in the army and the militia, and to furnish the issues to the respective states, is 18,300: the number manufactured in the public armories is about 25,000, which, with 11,000 made at private works, gives a total annual production of 36,000. In 1815, there were but 20,000 in the arsenals. There are at present 623 cannon for field service, and at the arsenals and in the old fortifications 1165, of antiquated patterns, and, with the exception of about 400 pieces, unserviceable. 1214 cannon of the improved pattern have been procured for new fortifications, in addition to which, 2587 are required; and for works now constructing, 4045 pieces will be necessary. The U. States have no public armories for the fabrication of cannon. The number of militia is 1,262,315; but the organization is very defective. The military academy at West Point, supported by the federal government, consists of the corps of engineers, professors and teachers, and 250 cadets, who are trained to the duties of privates, of non-commissioned officers, and of officers. To the bureau of Indian affairs, all matters touching the Indian relations are referred. This bureau is subordinate to the department of war.—4. The navy department was created by act of congress of April 30, 1798. The secretary issues all orders to the navy of the U. States, and superintends the concerns of the navy establishment in general. The board of navy commissioners, consisting of three officers of the navy, in rank not below that of a post-captain, was established in 1815. The board is attached to the office of the secretary of the navy, and, under his superintendence, discharges all the ministerial duties of that office relative to the procurement of naval stores and materials, and the construction, armament, equipment and employment of vessels of war, as well as other matters connected with the naval establishment of the U. States. There are navy-yards at Portsmouth (N. H.), Charlestown (Mass.), Long Island (N. Y.), Philadelphia, Washington, Gosport (Va.), and Pensacola. The naval force consists of twelve ships of the line, seventeen frigates, sixteen sloops of war, and seven smaller vessels. (See *Navy*.) Two dry docks have been completed at Charlestown and Gosport, at an expense of $500,000 each, and timber has been procured for five ships of the line, five frigates, and five sloops of war.—5. The postmaster-general has the appointment of the postmasters throughout the U. States, the making of contracts for carrying the mails, and the direction of every thing relating to the post-office department. The revenue arising from the post-office has been principally expended upon the extension and improvement of the establishment, by which means the regular conveyance of letters, newspapers, pamphlets, &c., has been extended to the inhabitants of every part of the Union, even to the remotest territorial settlements.

Post-offices in 1790,	75	Extent of post-road in miles,			1,875
" 1800,	903	"	"	"	20,817
" 1810,	2300	"	"	"	36,406
" 1820,	4500	"	"	"	72,492
" 1830,	8450	"	"	"	1151,76

In July, 1831, the number of offices was 8686. The amount of postage accruing in 1829 was $1,707,418; in 1830, $1,850,583; in 1831, $1,997,811; the expenses of the department during the latter year, $1,935,559, of which 635,028 was in compensation to postmasters, and $1,252,226 for transportation of the mail. (See *Post.*)

5. *Education.* The general education of all classes has no where been so much attended to as in the U. States, where it is well understood that free institutions can be rendered secure only by the diffusion of intelligence among the citizens. A remarkable proportion of the first colonists of New England were educated men. The tone which they imparted has never been lost; and the principle which they established, that the education of the community should be carried on at the common expense, has never been abandoned in the states they planted, but has been successively adopted by other states, until, at last, though its practical operation has been extended only to eight or nine, its soundness and importance are acknowledged by all. From this principle has grown up whatever is peculiar in American education: and in order to understand how this is carried on, and how it differs from education in other countries, it is necessary to trace its operations through the three stages of instruction provided for or protected by law in the different states—common schools, or free schools, supported at the public expense; incorporated academies; and incorporated colleges. 1. *Common Schools*, or *Free Schools.* It is obvious that the character of the mass of the people will be formed in these schools, because the great majority cannot, from their circumstances, afford to seek higher or better education than can be obtained in them. These schools, therefore, demand the first attention in a free state, and, happily for New England, received this attention so early, that they have always constituted the foundation of what is most peculiar and valuable in the character of its inhabitants. (See *Schools.*) One of the advantages of the system is, that the whole population is made to take a direct personal interest in the business of education, and to carry it on in the way best suited to supply the general wants. The people, in their town-meetings, vote the money, by their committees spend the money, and by their children get the benefits of the outlay: the whole management of the schools is directly in their hands. Another great advantage is, that the schools are supported by a tax upon property, although this remark does not apply strictly to all the states, in some of which there is a public fund for bearing a certain proportion of the expense. But every where in New England, except in Connecticut, they are supported by a tax on the property of all. It is therefore an arrangement eminently beneficial to the poorer classes of the community. In most towns, one fifth of the inhabitants pay at least one half of the tax, and, instead of sending one half of the scholars, do not send one sixth. Of course the school tax is substantially a tax on the rich to educate the children of the poor; and it is thus equally beneficial in its operation upon both parties. The poor have the promise of the law and the constitution that their children shall be educated, and thus preserved from the greatest temptation to crime: the rich are assured that they shall live in a community where universal education shall keep the foundations of society safe, and afford them a greater personal security than the law can offer. In this way the system of free schools, as practically carried into operation in New England, is to be regarded as a great moral police, to preserve a decent, orderly and respectable population; to teach men, from their earliest childhood, their duties and their rights; and, by giving the whole mass of the community a sense of character and a general intelligence, make them understand the value of justice, order and moral worth, and more anxious to maintain them than the law itself can be. The means of improvement being thus given to all, we find daily examples, in the U. States, of men raised to the most commanding influence from the poorer classes of the obscurest villages, who, but for the opportunity offered by the free schools, at their own doors, to make the first step in their career, would never have risen from the humble station in which they were born. The following remarks are from an article in a number of the Quarterly Journal (published in London), written by professor Ticknor of Boston, from whom we have received the materials for these remarks on education in this country:—"This system of universal education has now, therefore, become, to a remarkable degree, the basis of the popular character which marks the two millions of people in New England. The laws, indeed, differ in the six states, and have been altered in each, from time to time, since their first enactment; but all the states have laws on the subject: the

leading principles are the same in all of them; and the modes of applying them, and the results obtained, are not materially different. Indeed, in almost every part of these six states, whatever may be the injunctions of the law, the popular demand for education is so much greater, that the legal requisitions are generally or constantly exceeded. The most striking instance of this is, perhaps, to be found in the city of Boston, where the requisitions of the law could be fulfilled by an expenditure of three thousand dollars annually, but where from sixty to seventy thousand are every year applied to the purpose. And yet multitudes of the poor and small towns in the interior show no less zeal on the subject, and, in proportion to their means, make no less exertion. The mode in which this system of popular education is carried into effect is perfectly simple, and is one principal cause of its practical efficiency. The New England states are all divided into territorial communities called *towns*, which have corporate privileges and duties, and whose affairs are managed by a sort of committee annually chosen by the inhabitants, called *selectmen*. These towns are of unequal size; but in the agricultural portions of the country, which contain four fifths of the people, they are generally five or six square miles; and upon them, in their corporate capacity, rests the duty of making provision for the support of free schools. This duty is fulfilled by them, in the first place, by voting, at a meeting of all the taxable male inhabitants over twenty-one years old, a tax on property of all kinds to support schools for the current year, always as large as the law requires, and often larger; or, if this is neglected by any town, it is so surely complained of to the grand jury by those dissatisfied inhabitants, who want education for their children, that instances of such neglect are almost unknown. The next thing is to spend wisely and effectually the money thus raised. In all but the smallest towns, one school, at least, is kept through the whole year, in which Latin, Greek, the lower branches of mathematics, and whatever goes to constitute a common English education in reading, writing, geography, history, &c., are taught under the immediate superintendence of the selectmen, or of a special committee appointed for the purpose. This, however, would not be carrying education near enough to the doors of the people, in agricultural districts, to enable them fully to avail themselves of it, especially the poorer classes and the younger children. To meet this difficulty, all the towns are divided into districts, varying in number, in each town, from four to twelve, or even more, according to its necessities and convenience. Each district has its district school committee, and receives a part of the tax imposed for education; sometimes in proportion to the population of the district, but oftener to the number of children to be educated. The committee of the district determine where the school shall be kept, select its teacher, choose the books that shall be used, or delegate that power to the instructer, and, in short, are responsible, in all particulars, for the faithful fulfilment of the trust committed to them; the general system being that a school is kept in each district during the long winter months, when the children of the farmers are unoccupied, by a male teacher capable of instructing in reading, writing, arithmetic, English grammar, geography and history; while in the same school-house, during the summer months, schools are kept by women, to instruct the smaller children in knowledge even more elementary. In this way, for the population of New England, consisting of two millions of souls, not less than from ten to twelve thousand free schools are open every year, or, on an average, one school to every two hundred souls—a proportion undoubtedly quite sufficient, and larger than would be necessary, if the population were not in many parts very much dispersed."*—

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[*] On this point no one has spoken with more power than Mr. Webster, who, alluding, in public debate, to the free schools, where he himself received his earliest training, said,—"In this particular, New England may be allowed to claim, I think, a merit of a peculiar character. She early adopted, and has constantly maintained the principle, that it is the undoubted right, and the bounden duty of government, to provide for the instruction of all youth. That which is elsewhere left to chance, or to charity, we secure by law For the purpose of public instruction, we hold every man subject to taxation in proportion to his property; and we look not to the question whether he himself have, or have not, children to be benefited by the education for which he pays We regard it as a wise and liberal system of police, by which property, and life, and the peace of society, are secured. We seek to prevent, in some measure, the extension of the penal code, by inspiring a salutary and conservative principle of virtue and of knowledge in an early age. We hope to excite a feeling of respectability, and a sense of character, by enlarging the capacity, and increasing the sphere of intellectual enjoyment. By general instruction, we seek, as far as possible, to purify the whole moral atmosphere, to keep good sentiments uppermost,

2. The common or free schools give instruction in the elements of an English education (reading, writing, arithmetic, geography), and in the larger towns teach Latin and Greek. The public legislation goes no further in its requisition, but has generally stood ready to assist the people, whenever they have shown themselves disposed to go beyond this point. This is visible in the number of academies, incorporated by law for the purposes of giving higher instruction than can be obtained at the common schools. Individuals desirous of securing better teaching for their children than the law provides, associate together and raise funds, obtain an act of incorporation from the legislature for the management of their funds, and sometimes receive a grant of money from the public authorities. These institutions are often also founded by charitable donations of individuals, and are supported in part by the tuition fees of the pupils, which are generally very low. They give instruction in the ancient languages, and often in French, with the lower branches of the mathematics and natural philosophy. Children from the neighboring towns are sent to them, and are prepared for the colleges, or for active life as traders, mechanics, farmers, &c. There are about 500 such institutions in the country, and they are of great importance, by bringing the means of a useful practical education within the reach of a very large portion of the community. 3. The last step in education, of which the government and the people take any direct cognizance, is in the colleges, which are incorporated institutions, possessing more or less funds, a regular body of teachers, and the power of conferring degrees. (See *Colleges*.) The oldest and amplest of the colleges is Harvard college, in Cambridge, founded in 1638. (See *Cambridge*.) The example of Massachusetts was early followed by the other colonies; and in 1776 there were eight of these institutions in the U. States. The number at present is sixty, differing, however, extremely in the extent of the course of studies, the number of teachers, and other advantages which they afford to the students. The course of studies in all of them lasts four years, and embraces Greek, Latin, natural philosophy, mathematics, metaphysics, moral philosophy, chemistry, &c.; but all these studies are pursued very superficially, as may be inferred from the circumstances of the age and qualifications of the pupils when they enter the institution, and of all being required to pass through the same course without regard to the very unequal attainments, and the different talents and objects of each. The colleges have done much good in preparing many, in some degree, for their professional studies; but they do not give that thorough education which is now more and more felt to be wanted in the country. The period of education is itself too limited; most young men, in the U. States, completing their preparatory studies at about the age of eighteen. These remarks, though still applicable, in all their force, to nearly all the institutions of the country, are less strictly true at present of two or three of the oldest, in which attempts have been made to introduce a better method of study. On leaving the colleges, the young men who have been educated in the manner described, have hitherto, with few exceptions, entered upon the study of one of the three professions; but at present those who devote themselves to the business of manufacturing and engineering are more numerous than formerly. Beyond the colleges little has been done by public legislation for education. The law, medical and theological seminaries have been generally established and maintained by the exertions of private individuals, although this remark is not without exceptions. There are at present twenty-six theological seminaries in the country; but a small portion of the clergy have, as yet, been educated in these institutions, most of which are, indeed, yet in their infancy. The great body of the clergy pursue their studies under the direction of some individual clergyman, or do not study at all. The standard of theological instruction in the U. States must

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and to turn the strong current of feeling and opinion, as well as the censures of the law, and the denunciations of religion, against immorality and crime. We hope for a security, beyond the law, and above the law, in the prevalence of enlightened and well-principled moral sentiment. We hope to continue and prolong the time, when, in the villages and farm-houses of New England, there may be undisturbed sleep within unbarred doors. And, knowing that our government rests directly on the public will, that we may preserve it, we endeavor to give a safe and proper direction to that public will. We do not, indeed, expect all men to be philosophers or statesmen; but we confidently trust, and our expectation of the duration of government rests on that trust, that, by the diffusion of general knowledge and good and virtuous sentiments, the political fabric may be secure, as well against open violence and overthrow, as against the slow but sure undermining of licentiousness." (*Journal of Debates in the Convention to revise the Constitution of Massachusetts*, 1821, page 245.)

therefore be considered as very low. The number of medical schools is eighteen, in some of which the standard of education is high, and the advantages for scientific instruction great. The number of law schools is nine, most of which are of recent origin; the lawyers hitherto having been educated chiefly in the offices of the older and more eminent counsellors, little more having been required, for obtaining permission to practise, than reading more or less, according to the inclinations of the student, for a certain course of time. Besides these more public and general means of instruction, the private schools (i. e. such as are kept and managed by individuals at their own risk and discretion) are numerous; and, in many cases, they afford greater advantages than the public schools: several of these have been organized and conducted on the plan of the German gymnasia, and several mechanical and agricultural institutes have recently been established. Infant schools and Sunday schools also exist in great numbers. Subsidiary to direct teaching, the state of the public libraries should be considered; and in this respect there is a deplorable deficiency in the country. The only respectable libraries are those of Cambridge (36,000 volumes), Boston Athenæum (26,000 volumes), of Philadelphia (24,000 volumes), of congress (16,000 volumes), and of Charleston (13,000 volumes); and these must, of course, be very imperfect. (See *Libraries.*) Until the libraries of the country are put upon a better footing, it is not to be expected either that the scholars and scientific inquirers in this country can take their place at the side of those of Europe, or that instructers can be formed who will give the coming generations such advantages as their situation and wants will require. There are other institutions, which are of great importance in promoting general instruction, and which are little known in the U. States. There are botanical gardens at Cambridge, New York and Philadelphia; there are few collections of instruments for teaching natural philosophy and mechanics; there are some good collections of minerals, especially those at Cambridge, New Haven and Brunswick; but there is neither an observatory nor a good cabinet of natural history in the country. These are defects which also call for remedies. On the whole, it will be seen that, while popular education is very widely diffused, and a great amount of knowledge is communicated to the mass of the people, the means of education, as we ascend to the higher departments of literature and science, grow more and more imperfect, and at last almost entirely fail.

6. The population of no country in the world ever enjoyed the necessaries and comforts of life in such abundance as that of the U. States. The high rate of wages, the great demand for labor of all kinds, the plenty of provisions, the cheapness of land, and the lightness of taxes, connected with the absence of all restrictions upon industry, and the character of the institutions, would naturally produce such a result. It has been computed that a laborer can earn as much in one day as will furnish bread and meat to himself, wife and four children for three days nearly. It is observed by travellers—and the observation agrees with facts known regarding the lower animals—that this abundance of substantial and nourishing diet has had a visible effect upon the human frame. In the western country, in particular, where the climate is good, and rural occupations prevail, the great size and athletic frames of the men have struck foreigners with surprise. Where the means of subsistence are so easily procured, no person able to work need be in want; but there must be some in all countries, who, from age, or bodily or mental infirmities, are unable to support themselves: the number of these, however, is small, and comfortable provision is made for their support by state legislation. The actual expense is light; but we have no accurate data for determining its amount in the different states. A beggar is rarely seen in any part of the country. To have a just idea of the advantages which industry enjoys in the U. States, we must take into account that, while labor yields larger returns than in any other country, a much smaller proportion of the produce is taken away in the shape of taxes. The revenue of the general government is raised from the customs and the sale of the public lands—no direct taxes being paid except state taxes, which are very light. It should also be borne in mind, that the distribution of taxes is regulated on juster principles in the U. States than in other countries; so that the burden falls more directly upon property and consumption. The following statements will serve to illustrate these general remarks:—It is estimated by Mr. Holmes (Speech in the Senate of the U. States, 1832), that, if the industry of this country were divided into twelve equal parts, we might assign to

commerce two, to navigation one, manufactures two, and agriculture seven. The price of agricultural labor must, therefore, regulate that of the rest; though, of course, the price of other labor will be lower or higher according to the demand, skill, certainty of success, constancy of employment, &c.; yet it will rise or fall relatively with that of agriculture. The average price of agricultural labor, in 1830, was $8,95 per month throughout the U. States, in addition to the board of the laborer; in the New England and Middle States, varying from $8,00 to $10,00 per month; and in the Southern and Western, generally, from $6,00 to $10,00; while in Georgia it was $12,00, and in Missouri $15,00. Some attempts have recently been made to estimate, with more accuracy than had previously been done, the total amount paid by each individual for expenses of government, including the federal and state budgets, the amount paid for public schools, the clergy, the poor, and all incidental expenses. Some statements in the *Revue Britannique* for June, 1831, have elicited estimates on this subject from Mr. Cooper and from general Bernard. The writer in the *Revue Britannique* had calculated the sum of the public charges paid by each inhabitant of the U. States at thirty-five francs, and that of each person in France at thirty-one francs. Mr. Cooper makes this amount fourteen francs five centimes (or $2,64½); and general Bernard, who, however, leaves out the ecclesiastical expenditure, eleven francs forty-seven centimes ($2,16½), or, exclusive of that paid for the public debt, six francs eight centimes ($1,27). According to the estimate of the secretary of the treasury, the whole debt will be paid off in March, 1833. The estimated expenditures of 1832, for other purposes than the public debt, were $13,365,200, of which $3,000,000 would be raised by the sale of the public lands; leaving $10,365,200 to be paid by the people in the form of duties, or, estimating the population (according to the rate of increase), at the close of 1832, at 13,250,000, at 80 cents per head for the federal budget. An estimate by Francis Lieber, in the *Courrier des États Unis*, makes the local charge on each citizen of Massachusetts, where the taxes are higher than in the rest of the Union, as follows:

Town taxes, for schools, roads, &c.	$2,00
County taxes, for gaols, courts, county roads, &c., ...	50
State taxes, for militia, state governments, &c., ...	50
Paid for clergy, ...	50
Total, ...	$3,50

An estimate in the same journal calculates the local charges upon a citizen of New York at $1,75. If these estimates are correct, the total charge for a citizen of Massachusetts would be, after the year 1832, $4,30, and for a citizen of New York, $2,55. Whatever the amount may be, it is very certain that the public charges are in no part of the U. States felt as a burden. "Instead of sanguinary executions and injustice, we find in America a penal code, singularly mild, and cautious to an extreme in taking away human existence, a system of punishment formed with a view to the prevention of crime, and not in a vindictive spirit, and adapted for the reclamation of the criminal rather than for his destruction. Instead of spoliation or pillage, we see no country in which the possession and disposal of property are better protected, or its acquisition by judicious industry better secured. And, above all, there is no country in which religion and its ministers are more generally respected and supported by the mass of the population, although without compulsory provision, and where the lives and example of the clergy more nearly approach to those of their great primitive models."—Ouseley's *Statistics of the United States*. (See our articles *Crime*, *Criminal Law*, *Prison Discipline*, *Temperance Societies*.)

We close this part of the article with the following remarks from Warden's Introduction:—"There is no national church in the U. States, but the support of religion is left to the voluntary contributions of individuals. This is a singular contrast to the policy of the European states; and yet religion is by no means neglected among us. It is true, the rural population is, in general, ill supplied with places of worship; but it ought to be recollected, that this population is thinly scattered over a new country, and that Europe owes her amply-endowed churches not to the religious zeal of an enlightened age, but to the superstition and bigotry of an age of ignorance. It will be found, however, that in the great cities of Europe, where the population has outgrown the original church funds, the places of worship do not bear a greater proportion to the population than in those of the U. States.* It is only between the large towns of America and Europe that a comparison can be fairly instituted. And if the supply of churches is considered as a criterion of religious zeal, we should take into account, that new churches in Europe are built by compulsory assessments, whereas in America they are built by voluntary contributions. Even in country districts ill provided with churches, no impartial observer will say that the moral duties are less attended to than in Europe. The truth is, church establishments were founded in a dark and barbarous age, when the interests of religion were little understood; and they have since been supported as instruments of state policy. It has, no doubt, an imposing appearance, to set apart a large proportion of the fruits of the earth to furnish all classes with religious instruction. Something of this kind may have been necessary in the rude times when Christianity was first established in Western Europe. But religion is one of the natural wants of the human mind, and, in an enlightened age, requires no aid from the civil magistrate. His presumptuous attempts to promote its interests have been the means of corrupting and debasing it: they have lessened its influence over the hearts and conduct of men, undermined its authority, and filled the world with contention and bloodshed in its name. Church establishments, connected, as they commonly are, with exclusive creeds, have been the most effectual engines ever contrived to fetter the human mind. They shut up religion from the influence of new lights and increasing knowledge, give an unnatural stability to error, impose the dogmas and the prejudices of rude and ignorant times upon ages of knowledge and refinement, and check the genuine influence of religion by associating it with absurd practices and impious impostures. By connecting the church with the state, they degrade religion into an instrument of civil tyranny; by pampering the pride of a particular sect, and putting the sword into its hands, they render it indolent, intolerant, cruel, and spread jealousy and irritation through all the others. By violating the right of private judgment in their endeavors to enforce uniformity of belief, they multiply hypocrites. To what can we attribute the monstrous tyranny of modern Rome, from which it cost so much to emancipate the human mind? Not to any thing peculiar in its tenets, but to the corrupting influence of power associated with religious functions. The church of Rome was an established church of the most complete kind, and had, in the highest degree, all the vices that naturally belong to such a body. But experience will not warrant us in saying, that any other great sect, placed in the same circumstances, would have acted with more moderation. It is true that the toleration which the progress of philosophy has wrung from the priesthood, has stripped many of the national churches of their most offensive features; but much of the ancient spirit yet remains. It is still the case that men are compelled to pay for the support of a form of religion they do not approve of; that a difference of belief excludes individuals from many civil offices and civil privileges; that the established clergy are every where ready to justify the worst actions of men in power; and if they cannot impose silence upon the dissenters, they are often ready enough to harass and mortify them by such means as they still possess. In nothing have the U. States more reason to congratulate themselves than in their total exemption from the numerous dissensions, jealousies and oppressions that spring from an exclusive religious system. On this, as on other points, their experience affords a useful lesson to the world, and confirms the reasonings of doctor Smith, who pointed out the pernicious effects of such establishments more than forty years ago. In settling the form of her political and civil institutions, North America had great advantages. She had the knowledge and experience of Europe to guide her, without being fettered by the prejudices and sinister interests that check improvements in that quarter of the world. In all old communities, men are governed by ancient forms and usages as much as by just views of their interests, or the exigences of their situation. But when they are removed to a new scene, old habits and prejudices are cast off, and their opinions and conduct are moulded by their circumstances. Attempts were made in several of the colonies to establish feudal practices and high church privileges; but they were inconsistent with the habits and situation of the colonists, and fell to the ground. The constitution and history of the parent state taught them the principles of freedom; her laws afforded them models of what is wise and

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* The number of clergymen at present is estimated at about 13,000. Many of these, however, among the Methodists, are continually travelling about, and preaching in different places; and there are, besides, many persons who officiate as clergymen, although engaged in some other occupation. In 1830, Boston, with a population of

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61,392, had forty-three churches; New York, with 203,000 inhabitants, upwards of one hundred; Philadelphia, with a population of 167,811, had one hundred churches; and Cincinnati, with 24 831 inhabitants, twenty-three.

humane in legislation; while her errors and sufferings, and still more those of other nations, were beacons to warn them against the evils of corruption, injustice and tyranny. Guided by these lights and by their own experience, the colonists gradually framed their institutions on the basis of equal rights. The establishment of their independence delivered them entirely from foreign influence, and left them at liberty to consult their own wishes and interests in the form of their government. The constitution that resulted may be said to be the deliberate act of the whole nation; and, if it is not perfect, it at least answers all the ends for which government is framed in a much higher degree than any other which the history of mankind presents. This government rests on what must be the basis of every system of freedom—a full, fair and equal representation. All interests are secured, because all are represented. The elective franchise is nearly universal, and there is no excluded class, whose irritated feelings threaten destruction to a system that subjects them to degradation.[*] The government is strong without a military force, because the majority, who govern, are interested in its preservation. There can be no collision between the people and their rulers, because the former have an organ that faithfully expresses their will, and to this will the government, from its nature, must yield obedience. The lower house of congress, elected every two years, may be said, in the words of Burke, 'to be the express image of the feelings of the people.' The senate, elected every six years, must be less affected by the fluctuating humors of the people, and may be considered as representing more correctly their deliberate judgment and permanent interests. The control which the senate exercises over the acts of the house of representatives, is not that of an independent body over the will of the nation; but it may rather be compared to the control which the reason and experience of the nation exercise over the sudden impulses of its feelings and sentiments. It is only in the U. States that a genuine representation exists. What we see in the most enlightened states of Europe is but a feeble approximation. The legislative bodies there, though respectable in point of talent, are, properly speaking, but a kind of drags or encumbrances, hung on the machine of monarchy to equalize its motions. They rest on the basis of the privileged classes, whose interests they, of course, strengthen, but their connexion with the mass of the nation is very small; and they are much more efficient in raising taxes, and in supporting and enforcing the designs of the executive, than in checking its misconduct, or protecting public freedom. When a people in any country give themselves a representative system, they will take the U. States for their model; but when a new constitution emanates from the prince, the representation will be framed on as narrow a basis as possible: it will be virtually an aristocracy. Almost every other advantage is comprised in a government being free; and the freedom of that of the U. States appears, fortunately, to rest on the firmest foundation. So long as the present equality of condition subsists, the government must be essentially republican. If it be impossible, as some allege, to establish democracy in Europe, it is equally impossible to establish aristocracy in America. A democratic or unprivileged class exists in all countries; but no class exists at present in the U. States, or can exist for a long time to come, that could sustain the part of an aristocracy. And before such a class arises, the principles of freedom will have such a firm hold in the habits and associations of the people, that all attempts to strip them of the rights they now enjoy, must prove unavailing. As for monarchy, it cannot exist without a privileged class, unless in the shape of a military despotism. Against this evil the U. States are secured by their situation, which exempts them from the necessity of keeping up a great military force. North America has not, and, if she remain united, never can have, a formidable rival in her own division of the continent. In a few years, she will outgrow all her rivals in Europe so far, that her fleets alone will protect her from their attacks; for, with the extensive coast she possesses, and a population of fifty or a hundred millions, the empire of the sea must unavoidably fall into her hands. Besides, the noble moderation of Washington will render it difficult for any commander, at a future period, to become a traitor to the liberties of his country. In addition to all these securities for her freedom, she has the liberty of the press, and the growing intelligence of her population. In both of these respects, she enjoys such a distinguished preëminence over all other nations, as to render conclusions drawn from their experience inapplicable to her. The circulation of the journals is much more extensive than in any other country, and the class who take an interest in political matters includes the whole people. Every act of the government may be said to be performed under the eye of an intelligent population, which is continually exercising its judgment on public affairs, and never fails to reprehend, in the proper way, any abuse of trust on the part of the public servants. Any person who should attempt to play the usurper in the U. States, could not succeed by gaining over a few great men, as in other countries, but must impose upon the judgment of a whole nation, trained to decide on the conduct of public men; and this is a difficulty which no usurper has encountered yet. It is to the ignorance and apathy of the people that political impostors owe their success. An argument of rather more weight against the permanence of the government, is drawn from the tendency of so great a country to separate into different empires, from the strength of factions, or the opposite interests of different sections of the country. Admitting the reality of this danger, there are considerations that lessen its amount. The states that have been added to the Union since the revolution, and those that may be added in future, are peopled slowly and gradually by drafts from the older and densely peopled parts. The effect of this is to spread a similarity of manners, language and character over the different states; the ties of relationship and of a common origin are multiplied; and the connecting links, thus formed in the infancy of each new state, acquire the force of habit before it has grown up to maturity. An empire, formed in this way, contains none of the elements of disunion which existed in the Roman empire, and is even much more homogeneous in its character than the kingdoms of modern Europe. Again, the interests of single states, in different quarters of the Union, though opposite in some points, may not be practically incompatible; and they have all so strong a common interest in remaining united, that it is difficult to imagine how any benefit can be gained by a separation, which shall overbalance the advantages, both commercial and political, secured by the union. With regard to the danger from the violence of factions, it is to be considered, that, though the leaders of a faction are led by their passions, the majority of the people, in any district, will generally be guided by their interests; and as men become more intelligent, the pretexts by which the ambitious practise upon their followers must be continually losing their hold, and the dangerous influence of faction be more and more reduced. Faction naturally endeavors to make its strong-hold in the state legislatures; but the weight of each state in the confederacy diminishes as the number of the whole increases, and the influence of the general government will augment in the same proportion. But the grand remedy for all the evils to which the U. States may be exposed, lies in the spirit and intelligence of the population. What is the effect of the diffusion of knowledge but to give men juster and clearer views of their true interests? and it is contrary to experience to suppose, that, the better men understand their interests, the more they are disposed to disregard them. Can a great empire be held together by no other means than the compressing force of despotic power? and must men first be degraded and oppressed, before they can be made to understand the advantages of peace, union, and free intercourse? The stability, prosperity and greatness of a free nation is the most secure of all, because it rests not upon the wisdom or the virtue of one man, or one class of men, who may have separate interests incompatible with the public good, but upon a sense of common interest in the whole society, which never can cease to operate, and which, in an enlightened age, sophistry will find it hard to mislead. It has been said that the Americans have no national character. Without stopping to inquire in what this consists, we may observe, that, according to the testimony of travellers, the aspect of society in the U. States is distinguished, by many striking peculiarities, from that of Europe. Though the number of learned and scientific characters is much smaller than in

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[*] It will be seen, by referring to the constitutions of the different states, that, in some of the older states, infidels are excluded from certain offices; in others, Jews and Roman Catholics. There are also restrictions, in some of the older states, on the elective franchise, in one or two of which it is limited to persons possessing a certain amount of property, and in several is confined to citizens paying taxes. But in all the other states, the elective franchise belongs to the whole body of free citizens without distinction; and the effect of these restrictions is but inconsiderable. The exercise of this franchise is not only almost universal, but, from the shortness of the terms of office, very frequent. The whole number of electors in France, by the new electoral law of 1831, amounts only to about 250,000 persons, out of a population of 32,000,000. In Great Britain and Ireland, with a population of 24,271,398, only 400,000 enjoyed the elective franchise, previous to the passage of the reform bill, which has increased the number by about 500,000. In the U. States, the number is about 2,000,000, out of a population of 13,000,000.

France and Britain, the mass of the population are better informed than in either of these countries. They are not merely better educated, but they derive from their habits more practical sagacity and good sense. Indeed, the political and physical situation of the U. States explains whatever is peculiar in the character of the people. Their migratory habits enlarge the circle of their ideas, and destroy those local prejudices and attachments which belong to the European nations, where successive generations continue to vegetate on the same spot, and tread in the same circle. Reading the journals universally, and knowing a little of what is doing both in their own country and the world generally, they betray none of the clownish awkwardness which springs from conscious ignorance. Placed often in situations where they have to work their way and supply their wants with little assistance from others, they are inventive, persevering, full of resources, not easily deterred by difficulties. The prejudices of birth and rank, which fetter industry in Europe, have little existence in America: men change their profession as often as it suits their interest, and never deem any honest occupation disreputable. Enjoying abundance, and depending on no man's patronage, they are free, openhearted, unreserved, and, perhaps, somewhat rough in their manners. Accustomed to rely much on their own arm, they are manly, brave, high-spirited and enterprising. Of these qualities they exhibited many brilliant proofs during the late war. The shameful defeats sustained by land at first, which would have subdued the spirits of men of less energy, only provoked them to greater efforts; and, at the close of the war, the American arms were every where victorious, both by land and sea. The triumphs of the navy, gained by men without experience, over an enemy renowned for skill and courage, and inured to war by twenty years of victory, have few parallels in history. The issue of the contest has raised the American character in the eyes of the world, and nobly sustained the ancient reputation of republican valor. There is no where so much public spirit in the body of the people as in the U. States. Daily exercised in judging of public measures, and taught to consider themselves as members of the commonwealth, they feel a personal interest in the fortunes of their country. They are proud of her glory, and jealous of her honor, in a degree sometimes offensive to foreigners. Though parties are loud and violent in their contests, these are but the wholesome exercises of free and generous spirits in the field of honorable ambition. The people at large are proud of the government, because it is a monument of their superiority to other nations. They are attached to it, because, by its composition, its conduct and views are always in harmony with their opinions and interests. They feel its influence more by the protection it gives than by the burdens it imposes. All its offices are open to their ambition; and neither birth, profession, nor any form of religious belief, is a bar to their hopes. Doubtless the government of the U. States is not exempt from the errors and imperfections that adhere to all human institutions. But compare its public conduct with that of the old governments of Europe. How calm and reasonable is its language, always addressing itself to the understanding and the solid interests of the people, never to their passions or prejudices! It seeks no aid from superstition, supports no gainful impostures, and uses none of that disgusting cant with which the old governments of Europe varnish over the degradation of the people. It is a stranger to state craft and mystery. All its acts are done in the face of day. It promotes knowledge, religion and learning, without the preference of particular sects, and without debasing them by falsehoods beneficial to the ruling powers. It is the only government in the world that dares to put arms freely into the hands of all its citizens. From Maine to Mississippi, it commands a prompt and ready obedience, without any other weapon than a constable's staff. In a word, it secures property, satisfies opinion, promotes the developement of industry and talent with a rapidity hitherto unexampled; and, with the smallest sacrifice of individual rights and property on the part of the people, it accomplishes all that the most expensive and powerful governments pretend to."—For further information concerning the U. States, see Warden's *Account of the United States of North America* (Edinburgh, 1819, 3 vols., 8vo.); Seybert's *Statistical Annals of the United States* (1 vol., 4to., Philadelphia, 1818); Pitkin's *Statistical View of the United States* (2d ed., 1 vol., 8vo., New York, 1817); Bristed's *Resources of the United States* (New York, 1818); Darby's *View of the United States* (Philadelphia, 1828); Ebeling's *Geography and History of North America* (in German, Hamburg, 1793—99, 5 vols.); Flint's *Geography of the Mississippi Val-*

ley, with a View of the Physical Geography of the Atlantic States (2d ed., Cincinnati, 1832);* Hinton's *History and Topography of the United States* (2 vols., 4to., London, 1832); Everett's *America;* Lyman's *Diplomacy of the United States* (2d ed., Boston, 1828, 2 vols., 8vo.); Kent's *Commentaries on American Law* (New York, 1826—1830, 4 vols., 8vo.); Story's *Commentaries on the Constitution of the United States* (Boston, 1832, 3 vols., 8vo.). The *North American* and *American Quarterly Reviews*, published in Boston and Philadelphia, and the *American Annual Register* (5th vol., Boston, 1832), are also repositories of much valuable information on all subjects illustrative of the recent history, politics and statistics of this country.

Literature in the U. States. The first printing press in the U. States was set up at Cambridge, by the exertions and joint contributions of different individuals in Europe and America, in 1638. The first work published was the Freeman's Call, and the second, the Almanac for New England, both in 1639: the first book printed was the New England Version of the Psalms, an octavo volume of 300 pages. In 1676, books began to be printed in Boston: in 1686, printing was known in Philadelphia; and, in 1693, in New York. In 1700, there were but four printing-offices in the colonies; at the beginning of the present century, there were 300 in the U. States; and in 1830, there were about 1200. In 1800, about 100 original books and pamphlets were printed annually: in 1825, the titles of 590 original works and 257 reprints were collected without difficulty, and the number of all kinds now published is much greater, including nearly all books of general interest and value which appear in London and Edinburgh, and many translations from the German and French. During the first century, by far the greater part of the books printed were on theological subjects, and the remainder were chiefly publications made by order of the government. All were under the restraints of authority, which at last became so severe as seriously to impair the freedom of the press, and were more or less felt throughout the country till after the middle of the eighteenth century. But, from this period, a great change took place. Political, historical and miscellaneous works, a few in the belles-lettres, and several on scientific subjects, began to appear; and since the revolution, school books, periodical publications, political discussions, historical and miscellaneous works,—which, till 1700, were entirely unknown in the country,—gradually obtained the superiority, and, since 1800, have constituted the great mass of what has issued from the press. It is our intention to notice here the most prominent of those publications which have obtained a permanent value and reputation

1. *Newspapers.* No newspaper appeared in the colonies until 1704, when the News Letter was issued at Boston, and continued till 1776. The first paper published in Philadelphia was issued in 1719, and the first in New York in 1733. In 1775, there were 37; in 1801, there were 203; in 1810, 358; and, at present, probably not less than 1200. (See *Newspapers.*) Their number and cheapness, and the extent of their diffusion, are unparalleled. It may, in fact, be asserted, that almost every man in the country reads a newspaper; for, as every man has a direct personal interest in public affairs, and as the policy of the country has been to facilitate their distribution by the mail, they penetrate every where, and constitute, probably, the greater part of the reading of at least the agricultural portion of the people.† Their tone is favorable to morals, and to the diffusion of good knowledge, though, on the subjects which divide the political opinions of the country, they almost uniformly take party ground, and maintain it with extreme warmth and prejudice. Their influence is greater than any other element of society, except that of the schools and of the pulpit.

2. *Periodical Publications.* The earliest magazine attempted in the colonies was the General Magazine, published at Philadelphia (1741) by Benjamin Franklin, then a printer in that city; but it was

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* A great mass of statistical matter is to be found in the reports made annually by the head of each department to congress, and in the reports of the different committees of congress, all of which are printed. In 1832, the fruit of much statistical inquiry has been presented to the public in the printed memorials and reports of two conventions, held, the one at New York, the other at Philadelphia, on the subject of the contemplated modifications of the tariff. The American Almanac, printed at Boston, and the National Calendar, printed at Washington, also contain full statistical tables on all subjects relating to the U. States.

† The number of post-offices, in 1831, was 8686. The postage on each newspaper is one cent, if not carried beyond the state in which it is published, or not more than 100 miles, if carried out of the state; and one and a half cent for any distance above 100 miles, and out of the state. It has been proposed to abolish all postage on newspapers. (See *Posts.*)

sustained only six months. In 1743, a weekly magazine was started in Boston, but was continued only four weeks. In the course of the succeeding twenty years, twelve or fourteen others were attempted in the different cities, which, however, all failed; and it is believed that, in 1775, not one existed in the country, with the exception of the Pennsylvania Magazine, begun in that year, of which Thomas Paine was a principal contributor. All such works, in fact, made their way, for a long time afterward, slowly and with much difficulty. In 1810, there were twenty-four, of which the Portfolio, edited by Mr. Dennie, in Philadelphia, and the Anthology, edited at Boston, were the principal of general interest. The number is now greatly increased, amounting, probably, to about 100. The London Quarterly and the Edinburgh Reviews (q. v.) are regularly republished; the North American Review, edited in Boston, by A. H. Everett, and the American Quarterly, conducted in Philadelphia, by R. Walsh, the former since 1815, the latter since 1827, are the leading reviews of the country, and have each a circulation of between 3000 and 4000 copies, to which their execution amply entitles them. (See *Reviews*.) The Southern Review, published at Charleston, and the Western Review, at Cincinnati, were discontinued after having been issued a few years.

3. *Publications of Learned Societies.* The passion for learned societies, which sprung up in England and France about the middle of the 17th century, was not felt in the colonies till past the middle of the 18th. The oldest and most active of the scientific societies in the U. States, is the American philosophical society, instituted at Philadelphia, in 1769, over which Franklin and Rittenhouse were successively called to preside. It has published ten quarto volumes of Transactions, principally on scientific subjects, and, in 1815, appointed a committee to superintend the historical department, in which two volumes, octavo, have been printed, including Heckewelder's Account of the Delaware Indians. No other society of the kind existed in the U. States until after the revolution, when, in 1780, the American academy of arts and sciences was founded at Boston, which has published four quarto volumes of Transactions. In these are found mineralogical articles by professor Cleaveland, papers on literary subjects by John Pickering, and mathematical and astronomical papers by N. Bowditch, the translator and commentator of Laplace. The Massachusetts historical society was founded in Boston, in 1791, and has been the most active of the literary societies in the U. States. It has published twenty-two octavo volumes of collections, which constitute a rich mine for the history of the U. States, and particularly of New England. An academy of arts and sciences has existed at New Haven since 1799, but it has published only one volume of Transactions. The historical society of New York was established in 1809; and it has published four volumes, octavo, the last of which contains the remaining volume of Smith's valuable history of the state. The literary and philosophical society of New York, established in 1815, has published two volumes, quarto. The academy of natural sciences, founded at Philadelphia, in 1818, has published six octavo volumes, which are indispensable to a knowledge of the natural history of the U. States. The lyceum of natural history, founded at New York, in 1818, has published two volumes, octavo. There are some other associations in the U. States, which, like the New Hampshire historical society, and the Columbian institute, at Washington, are just beginning to publish their transactions, and yet others, especially several devoted to natural science, which send their papers regularly to some of the more prominent periodical publications of the time.

4. *Theological Writings.* The Puritan colonies of New England were, from the first, addicted to religious discussions and controversies; and as the press existed among them for a long time before it was found in other parts of the country, the early books of the colonies are, in a great degree, of a theological character. Even before printing was introduced, theological controversy was already known. Roger Williams had been banished from Massachusetts for heretical opinions as early as 1634; and the vanity and enthusiasm of Mrs. Hutchinson had disturbed the whole colony, and nearly unsettled its foundations, before 1638. For the first ten years after the press was established, nothing was printed on theological subjects, except the version of the Psalms and a catechism; but, in 1649, was published the Platform of Church Discipline, commonly known by the name of the *Cambridge Platform*, which had been adopted the year previously, and continued to be the constitution and rule of government for the New England Congregational churches

down to the period of the revolution, and is even now appealed to by those who are desirous to follow most strictly the ways of the Puritan fathers. This and the Indian Bible of Eliot, accompanied by Psalms in verse, in 1663, were the most important theological works that came from the press in the first century. The controversy with the Quakers, however, which was at its height between 1650 and 1660, produced two curious, among many worthless books—the Heart of New England rent by the present Blasphemies, written by John Norton, by order of the general court of Massachusetts, and printed in 1650; and George Foxe digged out of his Burrow, by Roger Williams (1676). At the beginning of the eighteenth century, the two Mathers were the leading divines of the colonies, and published a vast amount of books, which, however, are almost without value. The elder (see *Mather*, *Increase*) took part in some discussions with the Baptists as early as 1680; and the younger (see *Mather*, *Cotton*) is chiefly famous for his *Magnalia Christi Americana* (London, folio, 1702), containing the Ecclesiastical History of New England, from 1625 to 1698. It has much that is curious and striking, mingled with a strange credulity and the most fantastic learning, destined, perhaps, one day, to furnish abundant materials for works of fiction. The most powerful divine and metaphysical writer whom the country has yet produced was Jonathan Edwards, whose works have been frequently reprinted in England and the U. States (8 vols. 8vo.). (See *Edwards*.) His principal treatise, on the Freedom of the Will (1754), written in opposition to the Arminians, is a classic with the stricter followers of Calvin. The preaching of Whitfield (q. v.) in this country, between 1738 and 1769, produced the same remarkable effect here which it had done in England, and called forth Chauncy's Seasonable Thoughts on the State of Religion in New England (1743), a work of great firmness, dignity and Christian tenderness. In 1763, a warm controversy broke out in Massachusetts on the subject of Episcopacy, in consequence of some attempts, on the part of the English church, to set up her authority, and introduce her system of church discipline into that strong-hold of Puritanism. About thirty works were published on this subject, by Mayhew (q. v.), Johnson (q. v.), archbishop Secker, &c. The principal works were Mayhew's Observations on the Charter and Conduct of the Society for the Propagation of the Gospel in Foreign Parts (8vo., Boston, 1763); his Defence and Second Defence of the Observations; and Chauncy's View of Episcopacy from the Fathers (1771). In the period immediately before the breaking out of the revolution, the clergy of the country generally manifested a deep interest in the political discussions of the times; and when the revolution had actually commenced, they almost uniformly took part with the colonies. Doctor Cooper (q. v.), of Boston, was the confidential friend and correspondent of Franklin, Otis, Quincy and Warren; doctor Stiles (q. v.), president of Yale college, and one of the most learned men the country has produced, both preached and wrote on the same side; and doctor Witherspoon, of New Jersey, signed the Declaration of Independence, and was, from 1776 to the end of the war, a useful and able member of congress. Until some time after the peace of 1783, theological controversy almost ceased, and was not revived till the country became once more settled. In 1793, doctor Hopkins (q. v.), of Connecticut, published his System of Divinity, in which the doctrines of Calvinism are carried to an extreme which many of their advocates would not admit, and which laid the foundation of a separate sect of ultra-Calvinists, who bore the name of *Hopkinsians*. Dwight's System of Divinity (8 vols., 8vo., 7th edit., 1830) is perhaps the ablest exposition of Calvinistic divinity that has appeared, and continues to be frequently reprinted both in England and in this country. Since the beginning of the present century, anti-Trinitarian and anti-Calvinistic doctrines have been very extensively adopted by many of the clergymen of Boston and the vicinity (see *Unitarians*); and a warm controversy has been carried on between them and the orthodox clergy, in which doctor Noah Worcester, doctor Channing, doctor Ware and Mr. Norton have been the leading writers in defence of Unitarian views, and Mr. Stuart, doctor Woods and doctor Samuel Worcester on the opposite side of the question. The controversy has been managed with great ability, acuteness and learning on both sides, and cannot yet be considered at an end. The Sermons of doctor Freeman (1812; second collection, printed in 1830), of Mr. Buckminster (q. v.), (published in 1813 and 1829), of Mr. Thacher (1824), and of doctor Channing (1829; second collection, 1832), exhibit the prevailing views and style of thought of the Unitarians, with a less mixture of a polemical spirit than the strictly controversial works of the Unitarian writers. Apart from polemical and paraenetical divinity, very little has yet been done in this country for the advancement of theological science. Whilst the best foreign works, both of former and recent times, on biblical criticism and interpretation, are appreciated and studied, scarcely any original works in these departments have yet appeared. A few elementary books have been prepared for the use of students, such as Stuart's Hebrew Grammar (4th edition, 1831), and Chrestomathy (2d edition, 1832); Gibbs's Hebrew Lexicon, on the basis of Gesenius, and Robinson's translation of Wahl's Lexicon of the New Testament. Some subsidiary works have likewise been translated for the same purpose, of which it may be sufficient to mention Jahn's Biblical Archæology, translated by Thomas C. Upham (1823); Jahn's Introduction to the Old Testament, translated by Samuel H. Turner and William R. Whittington (1827); Jahn's Hebrew Commonwealth, translated by Calvin Stowe (1828); Winer's Grammar of the New Testament (1825), and Ernesti's Elements of Interpretation (1822). The most important original contributions that have as yet been made to theological literature in the U. States are the new translations of Job, with an Introduction and explanatory Notes (1827), and of the Psalms (1831), both by George R. Noyes, who, it is understood, is now engaged in making a similar version of the prophetic books, and purposes to continue his labors upon the remaining books of the Old Testament. A new version of the Epistle to the Hebrews, with a Commentary and Notes (1827), and a similar work on Romans (1832), by Moses Stuart, display much learning and research; and the New Testament in the common version, conformed to Griesbach's standard text, by John G. Palfrey (8vo., Boston, 1828), deserves honorable mention. Much of the theological literature appears in the form of contributions to religious periodicals—a species of publication with which the country abounds, from the weekly newspaper to the tri-monthly journal. At the head of this department stands the Christian Examiner and General Review, published, once in two months, at Boston—a work distinguished for its talent and literary character, as well as for its elevated moral tone and deep religious spirit. The Biblical Repository, published quarterly at Andover, is no less celebrated for its critical and exegetical learning; whilst the Christian Spectator, published quarterly at New Haven, displays great acuteness in discussing the vexed questions of dogmatic theology. The theology of the U. States is as distinctive as any other feature in its character. Modified by the various degrees of intelligence and refinement in different sections of the country, it exhibits every where the same freedom, elasticity, and aptitude for change, which characterize all our manners and institutions. Perhaps in no other nation on the earth is there so much diversity of religious sentiment, or so great a variety of sects. This is doubtless owing, in a great measure. to the absence of a church establishment, and to the consequent freedom enjoyed by each individual for forming his opinions for himself. In theology, as in every thing else here, all is in progress, and in the way of improvement, because all is unfettered and free. American theology, in its various forms, may be considered as the native growth of the land; for, though originally imported from abroad, it can hardly be said to have been since subjected to any extraneous influence. Multiform as it is, it has sprung up from the varying sentiments held by the first settlers,—coming as they did from different countries, England, Holland, Germany, Sweden,—from the subsequent intermixture of these sentiments, and from the free scope here given to religious thought and feeling. Neither the orthodox nor the liberal system of theology has been perceptibly affected by foreign influence. The works of the most eminent European theologians, particularly the German, are diligently studied, and are prized as the most valuable helps in the criticism and interpretation of the Scriptures. Yet, though highly esteemed as verbal critics, they are not regarded as very safe guides in matters of taste and judgment. Their theological deductions are not held in any undue honor; and the extravagant interpretations and wild conjectures advanced by some of these transatlantic scholars, meet with no sympathy or encouragement from any denomination of Christians. In short, American theology, like its literature, is yet in its infancy; and many years must elapse before it arrives at its full growth. At present, its products are green and crude. Not till it has reached its maturity, will it yield fruit that shall be for the healing of the nation.

5. *Law.* The earliest colonists, of course, needed laws, in order to maintain

among themselves civilization and the rights of persons and property. Those who settled Virginia brought out with them a code of laws, which rested on the authority of the company in England: but the religious adventurers at the north were republicans from the first contract for a civil government, signed on shipboard, Nov. 11, 1620; and they elected their governor, and made such regulations as they thought expedient, by popular vote. In 1640, 100 ordinances were prepared, under the direction of the legislature of Massachusetts, by the reverend Nathaniel Ward, of Ipswich, who had formerly been a lawyer in England. They were called the *Body of Liberties*, and were published by the constables through the villages of the colony. In 1648, they were enlarged, and printed at Cambridge, and thus form the first law book prepared and printed in the colonies. They were again enlarged and printed in 1660 and 1672. This collection was followed, in 1672, by the Book of the General Laws of New Plymouth, and, in 1673, by the Book of the General Laws of Connecticut, and so on, in succession, by the codes of the other colonies. But, excepting such special laws as were needed to suit the particular circumstances of the country, there was nothing done, for a long time, to enlarge or perfect either legislation itself or the study of the law as a profession. The students of legal and political science resorted to the mother country; and thence, too, came nearly all the judges. Even down to the period of the revolution, excepting Mercer's Abridgment of the Laws of Virginia, in 1758, Simpson's Justice of the Peace, in 1761, and the County and Town Officer, in 1768, with perhaps one or two more practical works of the same kind, nothing appeared but the records and acts of the different colonial legislatures. The whole of this state of things, however, was necessarily changed as soon as the country became independent, and was compelled to look within its own limits for no small part of its judicial authority and construction. Since that period, therefore, the following division may be made of the legal writings that have been published in the U. States:—1. In the first place, the U. States, as a government, have published their statutes regularly from 1789 to the present time; and an excellent edition has recently been printed under the direction of judge Story (3 vols., 8vo., Boston, 1827). The decisions of the supreme court of the U. States have also been published regularly, from 1791, by Dallas, Cranch, Wheaton and Peters. Besides these, the circuit courts of the U. States have sometimes had reporters, of whom the most prominent are Gallison and Mason in the eastern circuit, whose reports, beginning in 1812, contain the decisions of judge Story. The reports of the third circuit contain the decisions of judge Washington. Some individual cases, which excited great interest, have also been published separately, of which the most remarkable are Burr's trial for high treason (1807), and the Dartmouth college case, which, in 1819, settled the question of legislative interference with chartered rights. To these should be added some works of a more general nature, which relate to the laws of the U. States, such as Elliott's Debates of the Conventions on the Adoption of the Constitution (4 vols., 8vo., 1827—30), the three first volumes containing the proceedings of the Massachusetts, New York, Virginia, Pennsylvania and North Carolina conventions; the fourth, the journal of the federal convention, with the subsequent acts of congress and decisions of the courts upon constitutional points;—Sergeant's Constitutional Law (1822); Rawle's View of the Constitution (2d ed., Philad., 1829); Duponceau's Jurisdiction of the Courts of the United States (Philad., 1824); Kent's Commentaries on American Law (4 vols., 8vo., 1826—1830); and Story's Commentaries on the Constitution (3 vols., 8vo., Boston, 1832). These works, especially Wheaton's and Peters's Reports, in which are the decisions of chief justice Marshall, the Report of the Dartmouth college case, and Kent's and Story's Commentaries, comprise a body of sound, learned and able law, and give a complete view of the principles and practice of the federal courts, and of the constitutional law of the country.—2. In the second place, the separate states have published their statutes; and the decisions of the supreme courts of nearly all of them have also been from time to time reported, making a large mass of materials, of very unequal value, depending on the degree of talent and learning assembled at the bar and on the bench of each state. Considered in this point of view, the state of New York has produced Johnson's Cases and Reports (from 1799 to 1822), continued by Cowen; Blake's Chancery Practice (1818); Dunlop's Practice of the Supreme Court (1821 and 1822); Duer and Paine's Practice:—Massachusetts, Tyng's and Pickering's Reports (from 1804); Adams's Essay on Feudal and Canon Law (1784); Livarmore on Principal and Agent (1811); Fessenden's Law of Patents (1822); Phillips on Insurance (1824); Story's Law of Bailments (1832); Dane's Abridg. of Amer. Law (6 vols., 1823—1829); American Jurist (since 1829); and Jackson On Real Actions (1828):—Pennsylvania, the Reports of Dallas, Yeates, Binney, and Sergeant and Rawle (1799—1822); Hall's Law Journal (6 vols.). Virginia has an excellent edition of her Statutes by Henning, and Reports by Henning and Munford, Wythe, Washington, Call, and others. In New Jersey, Griffith's valuable Law Register appeared in 1822 (2 vols.). Connecticut has Day's Reports (since 1802); Swift's System of the Law (1795—6), and work On Evidence (1810): and South Carolina, Reports by Bay, Desaussure, Nott and McCord, beginning 1783. In Rhode Island, Angell's treatises on Tide Waters and Water Courses should not be passed over. In the Western States, the peculiar tenure of the lands, which, more than any thing else, tends to modify the character of a people, and the administration of the law among them, has brought forth, particularly in Kentucky, a bar of great acuteness and power; and in Louisiana, the *siete partidas* of the fourteenth century so far prevail as law, that it has been necessary to reprint part of them, and the French law is still oftener called in. (See *Louisiana Code.*)—3. The last kind of law books published in the U. States, which needs to be noticed, is English law books reprinted here, generally with notes, to make them better suited to the particular wants of the country. The number of these, both of reports and treatises, is very great; and it may, in fact, be said, that the whole body of the English law, as it appears from Westminster hall, is immediately republished here. Of those works to which the notes have added the most value, may be mentioned Tucker's Blackstone (1803); Condy's Marshall on Insurance; Dunlop's Phillips on Evidence; Story's Abbot on Shipping (1828); Metcalf's editions of various works. From what has been said, it is evident that the number of law books published in the U. States is very great. The number of merely American books already exceeds seven hundred volumes, of which, however, by far the greater part consists of statutes and reports. The number of reprints is yet larger, and the amount of both is constantly increasing. (See the article *Law, Legislation, Codes*, and also the article *Common Law.*)

6. *Medicine.* The practice of the medical art in the early period of the colonies, was much in the hands of the clergy. Physicians, indeed, came out among the first settlers, and were among the most valuable of them, both in Virginia and Plymouth. The first medical work published in America was a Brief Guide in the Small-Pox and Measles, by the reverend Thomas Thacher of Boston (1677); and the first introduction of inoculation for the small-pox, in 1721, was under the influence of the reverend Cotton Mather. It was, however, long before medical books were freely published in the U. States, because it was necessarily long before medical schools and hospitals could furnish the needful means of observation and instruction; and, in the mean time, the entire dependence of the country for medical education and medical books was on England and Scotland. Doctor Cadwallader, of Philadelphia, doctor Tennent, of Virginia, and doctor Lining, of South Carolina, published different treatises on medical subjects, between 1740 and 1750; and from that period medical works have not ceased to appear in considerable numbers. The troubles of the revolution, indeed, for a time interrupted them; but the success of the medical schools, established on the return of peace, brought them forth again in still greater numbers. The most prominent writer in the period immediately succeeding the revolution, was doctor Benjamin Rush (q. v.), of Philadelphia, well known both in Europe and America, both by his Medical Inquiries, his Observations on the Diseases of the Mind, his Lectures, and other works, all of which bear marks of an original and adventurous mind. Caspar Wistar (q. v.) published a System of Anatomy, and doctor Darcy, who died in 1818, at the age of thirty-five years, Elements of Surgery, which are much valued; while, among the living authors in Philadelphia, doctors Chapman and Dewees should be mentioned with distinction. Doctor Warren (died in 1815), who founded the medical school at Cambridge, and with it the medical education of New England, and doctor J. C. Warren, his son, and doctor Jackson, all of Boston, doctor Edward Millar and doctor Hosack, of New York (whose writings have been published under the title of Medical Essays, New York, 1824—1830, 3 vols.), with others, both in these places and elsewhere, have been advantageously known at home and abroad, and have placed the medical character of the country as high as

any part of its general intellectual character.

Theatre. The early settlers of any country are little likely to resort to theatrical amusements; still less the early settlers of a country a great part of which was colonized by persons who came to it for the sake of enjoying, in stern freedom, the exercise of their religious opinions. And, in fact, the wants of the American colonists every where, and their scrupulous severity at the north, long kept out all dramatic entertainments. It was, however, in Boston, the centre of Puritanism, that they first appeared. In 1750, two young Englishmen, assisted by volunteers from the town, acted privately Otway's Orphan, at the coffee-house in State (then King's) street. But some disturbances took place about the door, from the anxiety of the crowd to get admission. The whole affair became matter of discussion and inquiry, and all such exhibitions were immediately prohibited by a law, which was renewed by successive legislatures, till public opinion was changed, and a theatre regularly established. At about the same period, a strolling company, called the *American company of comedians*, under the management of David Douglass, a Scotchman, came out from England, and occasionally gave representations, both on the continent and in the West Indies. In 1758, they acted first in New York in a sail loft; and, in 1762, performed at Providence the first play that was publicly represented in New England. During the revolution, while the British troops were in possession of Boston and New York, the officers, especially at the latter place, performed plays in amateur companies, and in one or two instances wrote farces ridiculing the Americans, one of which was printed. But there was no regular theatre any where until after the war of the revolution. The first was established in New York, the next in Boston, in 1793, and the third in Philadelphia. They have since been established in all the principal cities, and are now fast increasing. The first play written in the U. States was probably the Prince of Parthia, by Thomas Godfrey (q. v.), son of the inventor of the quadrant called by the name of *Hadley*. This young man died in 1765, and his Poems, including the tragedy above mentioned, were published the year after his death. It was never acted, and, though it shows some talent, discovers so little skill in the construction and style, that it cannot be looked upon as any thing better than the forlorn hope of the coming drama. The next play was probably a comic opera, in ridicule of an opinion prevalent, in the middle of the last century, among the common people, that the Buccaneers had hidden treasure along the coast. It is called Disappointment, or the Force of Credulity, and was written by John Leecock, of Philadelphia, and printed in 1767 and 1796, but was never acted, though by no means without spirit and humor. At Boston, during the revolution and previously, several farces and plays were written and printed by the patriots, and probably some of them were acted. The best of them was the Adulateur, a Tragedy, as it is now acted in Upper Servia (1773), a composition by no means without poetical merit, and expressing very strongly the feeling that prevailed in New England after the massacre of March 5, and before the final outbreak of hostilities at Lexington and Bunker hill. It was written by Mrs. M. Warren. Of less value were the Group (1775, also by Mrs. Warren), in ridicule of the tories; the Blockheads, or the Affrighted Officers (1776), in ridicule of the British troops, and the Motley Assembly, also in ridicule of the tories. Such expressions of public feeling, of course, disappeared with the causes that produced them; and when a regular theatre was established, a different class of dramas came to supply their place. The first regular author appeared in New York with the first theatre: this was William Dunlap, who, beginning, in 1788, with a comedy called the Father of an Only Child, wrote and translated successively between forty and fifty pieces, among which was the Archers (1796), a tragedy on the story of major Andre (1798), and a good many pieces for public occasions and celebrations, which had much success. He was the manager of the theatre, and may be considered as the only person who has done much in America to support the public drama by the means that sustain it in Europe, though for some years he has abandoned it, and is now a historical painter of some reputation. Mr. Dunlap has lately published a History of the American Theatre (New York, 1832). It is not worth while to go into a minute account of authors and pieces which have no permanent value. Mrs. Warren, who wrote the Adulateur and the Group, above mentioned, and a History of the Revolution, published (1790) two tragedies, the Sack of Rome, and the Ladies of Castile; Thomas P. Lathy published (1800) Reparation, or the School for

Libertines, a comedy; David Everett published (1800) Daranzel; C. J. Ingersoll, now an eminent lawyer, published (1801) Edwy and Elgiva, and (1831) Julian, a tragedy; W. Jones (1801), Independence; W. C. White (1810), two pieces, the Clergyman's Daughter, and the Poor Lodger. James N. Baker (between 1807 and 1817) wrote often for the stage; and his Marmion and Superstition are much praised for poetical talent. Some others have occasionally furnished pieces to the acting theatre, which have received a share of transient applause. In general, however, the American theatre has been supplied with plays from the English theatre.

8. *Romantic Fiction.* Compared with the other departments of elegant literature, romantic fiction is of recent origin. It is the only form of the belles-lettres which is absolutely due to modern invention, and has reached or approached its perfection only in our time. At the period when our forefathers landed in this country, the domestic form of romance—that which rests on private manners and character for success—was unknown in the world; nor, excepting Don Quixote, had a single work of romantic fiction been produced which is still read, except from curiosity. It is not, therefore, remarkable, that works of prose fiction should have been the last that appeared among us; for there was certainly nothing in the severe theology of the Eastern States, or in the anxiety and wants that were every where encountered by the early settlers, to give birth to those light and fanciful forms of literature, which had not yet taken their final character even amidst the refinements of the English and French courts. Up to the period of the American revolution, therefore, no symptom of it appeared on this side of the Atlantic. The first work of prose fiction which appeared in the U. States seems to have been the Foresters, which was originally published in the Columbian Magazine at Philadelphia, in 1787—88, but was printed separately in 1792, and again in 1796. It was written by doctor Belknap, of Boston, author of a History of New Hampshire, and was an imitation, and, in some respects, a continuation, of Arbuthnot's John Bull, giving, with much humorous solemnity, an account of the first settlement of the country, the war of the revolution, and, in part, of the French revolution. The next work of fiction published in the U. States seems to have been the Algerine Captive (1797), written by the late Royall Tyler, then a lawyer in Walpole, and since chief justice of Vermont: the first volume contains sketches of manners in the interior of New England, which have much freshness, spirit and truth; but the second, in which the hero becomes a captive in Algiers, is dull and common-place. This was the first genuine novel published in the U. States. The first author, however, who can be considered a regular writer of novels in America, was Charles Brockden Brown. (q. v.) Between 1798 and 1801, he published six novels—Wieland, Ormond, Arthur Mervyn, Edgar Huntley, Clara Howard, and Jane Talbot He was a writer of high gifts. His manner sometimes resembles that of Godwin, who was then in great reputation; and his sketches of the sleep-walker, in Edgar Huntley, are among the most vivid in the language. His writings have often been published separately in England and the U. States, and, in 1827, an edition of his novels was printed at Boston (7 vols.). In some respects, he is still the principal novelist whom the country has produced; but the more dramatic form of romance writing, since become common under the influence of sir W. Scott's example, has changed the public taste; and Brown's novels are less interesting and less read than they otherwise would be. In 1810, Washington Irving published his Knickerbocker's History of New York (2 vols.), an imitation, in many respects, of Swift's Tale of a Tub, and containing, under a similar allegory, though with a more strict adherence to fact, a history of the Dutch government of the province of New York. It is a work of much genuine humor, and contains descriptions of natural scenery of great beauty and power, so that, though much of it is local, it has been often reprinted both in England and this country, and has been translated into French and German. It is hardly necessary to enumerate the other works of this accomplished writer. Jonathan Oldstyle's Letters, first published in the New York Morning Chronicle (1802); Salmagundi, or the Whim Whams of Launcelot Langstaff and others (1807); and, at a later period, the Sketch Book, Bracebridge Hall, Tales of a Traveller, &c., have all been translated into German. Under this head should also be mentioned the Old Bachelor (1812), and the British Spy, of Mr. Wirt (late attorney-general of the U. States), of which the tenth edition, published in 1832, contains a biographical sketch of the author. A few other persons, in the period just passed

over, also wrote novels which had a limited success. Mrs. Foster wrote the Boarding School, and the Coquette; Mr. Dennie wrote Female Quixotism; and Mrs. Rowson, Rebecca, Sarah, and some other stories. In general, however, this was not a popular form of writing, and very few attempted it. This state of things continued until sir W. Scott gave an impulse to the whole empire of romantic fiction, which has been felt through all the borders of Christendom, and no where with more force than in the U. States. The person who has shown the most power and disposition to imitate this form of romance is Mr. Cooper. He began, in 1820, with Precaution, a novel, the scene of which was laid in England; and its style is in the manner of Miss Burney; but the direction was wrong, and his success was small: it was only when he touched his native earth, that he gathered strength. In 1821, he published his Spy, the scene of which is laid amidst the American revolution; and from that time to the present, he has published no less than eight similar tales, all founded in American manners, and with a degree of success to which no American author has before attained in this department. In his last productions (the Bravo and the Heidenmauer) he has left America for the old continent. His romances have been read in the U. States almost as extensively as sir W. Scott's, and, besides being regularly reprinted in England, are no less regularly translated and published in French and German. Miss Sedgwick, the author of a New England Tale (1822), Redwood (1824), Hope Leslie (1827), and Clarence (1830), all on American subjects, should be distinguished among the popular writers of the time: her works have been reprinted with success in England. Miss Francis (more known as Mrs. Child), the author of several successful works in other departments, should be mentioned here on account of her Hobomok (1824), and her Rebels (1825). Paulding's novels (Dutchman's Fireside, Westward Ho, &c.) have found many readers on both sides of the Atlantic; and Flint's Francis Berrian shows much freshness and vigor. Since 1820, the whole course of things in relation to romantic fiction has been changed. Before that time, an American novel or romance was extremely rare: it is now the most common of all the forms of our literature, and every year produces several, which will not easily be forgotten. This change is mainly due to the circumstance, that American subjects have furnished their materials.—For the preceding account of literature in the U. States, we are indebted to manuscripts of professor Ticknor.

9. *Arts and Sciences.* The progress of the Americans has been greater in the useful arts than in the sciences, though their advances in the latter are respectable, considering the shortness of their career. Inventions and discoveries in the former have been promoted by means of the patent office, which secures, to persons who apply for it, the exclusive right to the fruits of their ingenuity. This office is attached to the department of state. Models and drawings of the machines of which the right is obtained, are deposited with the director, with a description of the invention, the name and residence of the patentee, and date of the patent. The whole number of patents issued, from the establishment of the patent office in 1790 to the first of January, 1832, is 6911. The Americans have, indeed, shown a particular aptitude for making discoveries and improvements in the mechanic arts. A great number of remarkable inventions, of which the cotton-gin, the steam-boat, the nail and card machines, and the machine for spinning hemp, are only the most prominent among a hundred others, with essential improvements upon many processes of manufacture, and upon many machines previously in use, have been made in the U. States. In ship-building, the Americans are decidedly superior to any other people, combining beauty of form, speed in sailing, and capacity of carriage, in their vessels. (See *Ship.*) In regard to the fine arts, though there is no such thing as an American school, yet the U. States have produced several eminent painters; and some works of sculpture of merit have been executed in the country. The names of West, Copley, Stewart (see the articles), Trumbull, Vanderlyn (who, in 1808, gained the French prize-medal for his Marius on the Ruins of Carthage), Jarvis, Wood, Allston, Leslie, Peale, Sully, Morse, Newton, Neagle, Doughty, Fisher, King, Inman, Cole, and others, are, some of them, well known in Europe. Academies for the cultivation of the fine arts have been established at Philadelphia and New York; and a picture-gallery has been connected with the Athenæum in Boston, in which the annual exhibition of paintings is very respectable. Plaster casts of the principal antique statues have been obtained for

these institutions, which have been liberally patronised. A statue of Washington has been executed by Canova for the state of North Carolina; another, by Chantrey, for a number of citizens of Boston; and Greenough, a native artist, favorably known by his Chanting Cherubs, and some busts of distinguished Americans, has been employed by congress to execute a colossal statue of the same great man for the capitol at Washington. Augur, a self-taught artist, has executed a group, Jephthah's Daughter, and some single statues. It was a long time before any attention was paid to the natural sciences in the colonies; for, although the early inhabitants of the U. States found themselves literally in a new world, surrounded with objects, in the vegetable, animal and mineral kingdoms, which had never been accurately described, yet the imperfect state of education, the want of collections and apparatuses, could only be slowly overcome. In 1725, a professorship of mathematics and experimental philosophy was founded in Harvard college, by Mr. Hollis, a friend of the institution, in England; but New England, at least, could not furnish a man capable of discharging the duties of the office. Mr. Greenwood went out to England, and, after studying a short time under Desaguliers, returned to America, and was appointed professor. There was also a professorship of natural philosophy and mathematics at William and Mary's at an early period, but there was none at Yale college until 1770. Logan, Godfrey (inventor of the quadrant), Rittenhouse (inventor of the orrery), Franklin, Rumford, &c. (see the articles), were self-taught men. During the last twenty years, scientific studies have been pursued in a more systematic and thorough manner, and valuable treatises upon almost all subjects of natural science and natural history, so far as relates to the U. States, have been produced. Mineralogy has been studied with much zeal; and Cleaveland's Treatise on Mineralogy and Geology (2d edition, 2 vols, 8vo., 1822), and Maclure's Geology of the U. States (1817), deserve to be mentioned. Among the botanical works, Elliot's Botany of South Carolina and Georgia; Bigelow's American Medical Botany (3 vols., 8vo., Boston, 1817—20), and Florula Bostoniensis; Barton's Flora of North America (3 vols., 4to., 106 colored engravings, Philadelphia, 1821—23), and Medical Botany of the U. States (2 vols., 4to., 50 colored plates, 1825); Nuttall's Genera of North American Plants, a good sequel to Pursh's Flora, &c., are valuable. Say's American Entomology (with colored plates, 3 vols., 8vo., 1824—25); Godman's American Natural History (3 vols., 8vo., 1826—28); Wilson's American Ornithology (9 vols., folio, Philadelphia, 1808—1814); Bonaparte's American Ornithology (3 vols., 4to., Philadelphia, 1825); Nuttall's American Ornithology (2d vol., Boston, 1832), are works of great merit. The splendid work of Audubon is executing in London (with colored engravings); that of Michaux, a foreigner (the North American Sylva, or a Description of North American Forest Trees, with 150 colored engravings), though published in Philadelphia (3 vols., 8vo., 1817), was executed in Paris. In addition to these works, we must mention Conrad's Fossil Shells (with colored plates); Shepard's Fossil Remains; Say's Conchology (with colored plates), &c. The principal mathematical work which has been produced in the U. States is Bowditch's translation of the *Mécanique Céleste* of Laplace, with a commentary (2d vol., 4to., Boston, 1832). Silliman's Journal of Science and Arts (since 1818) has reached the 22d volume.

10. *Poetry*. The first book published in the U. States (8vo., 1640), was an original version of the Psalms, in metre, "for the use, edification and comfort of the saints," made by Eliot, Welde, and Mather, three clergymen appointed for this purpose. This version was afterwards improved by Dunster, president of Harvard college, and Mr. Lyon, with additions, of which the twentieth edition was published in 1722: it was often, also, reprinted in Scotland and England, and used by many of the dissenting congregations. Mrs. Anne Bradstreet published a volume of poems in 1642, which contains some good descriptions. P. Folger, of Nantucket, grandfather of Franklin, wrote a Looking-Glass for the Times (1676). These works, with Michael Wigglesworth's Day of Doom, a Poetical Description of the Last Judgment, which went through many editions, and was republished in London, and a few elegies, stanzas, &c., without taste or spirit, appear to constitute the colonial Parnassus of the seventeenth century. Nor does the first half of the eighteenth century present a more attractive prospect. A volume of poems by John Adams (Boston, 1745); another by Thomas Godfrey (Philadelphia, 1765), including the Prince of Parthia, a tragedy, and the Court of

Fancy; W. Livingston's Philosophic Solitude (1747), hardly deserve to be mentioned. The excitement of the revolution produced several satirical poems of considerable merit. Trumbull's McFingal, written in 1775, to ridicule the British and the tories, passed through more than thirty editions, and was often republished in England. Philip Freneau, author of a number of poems, began to write just before the revolution, but continued till a comparatively recent period. He is distinguished for ease, humor and sprightliness. Timothy Dwight was the author of the Conquest of Canaan, an epic poem, in eleven books (1785); Greenfield Hill, a descriptive and didactic poem; and the Triumph of Infidelity, a satirical poem. Joel Barlow (q. v.) published his Vision of Columbus in 1787, and cast anew under the title of the Columbiad, in 1808; the Conspiracy of Kings in 1793, and his Hasty Pudding in 1799. More recently, the poems of Allston, Pierpont, Paulding, Sands, Hillhouse, Percival, Halleck, Wilcox, Brainard, Bryant, Dana, Sprague, Willis, and others, have enjoyed different degrees of popularity in their own country. Independently of other circumstances, which operated more powerfully, indeed, at an earlier period, but which still continue to operate with great force, the superior popularity of some of the forms of prose fiction at the present day may partly account for the poverty of the Americans in the poetical department.

11. *History and Biography*. It is a peculiarity in the history of the U. States, that, from the beginning of the first European settlements of their territory, we have accounts of the events which have occurred in them, of the chief actors in those events, and, even farther back, that the written charters which described their objects, and defined their privileges, are yet in our hands. We know the family names, the condition in life, the local origin, even the features of the first settlers; and, from the period of the first emigrations downward, we have contemporaneous narratives and documents, with few interruptions. It is true, that the first 150 years of colonial history, or rather the public history of that period, presents little variety of incidents, and has none of the grandeur and brilliancy which gives a charm to the story of great empires. It is also true, that the Americans have produced no historical works which can lay claim to high literary merit, or which attract notice merely from the excellence of their execution. But, though most of the works which we shall enumerate in this department are local in their nature, many of them are of general interest to those who would trace the developement of seminal principles into life, watch the cradle of a recent people, and witness the growth of families and villages into populous communities and powerful states. Among the earlier works on colonial history are Morton's New England Memorial (Cambridge, 1669), of which the fifth edition (Boston, 1826) contains notes by the editor, J. Davis; Winthrop's Journal (first complete edition, with notes, by J. Savage, Boston, 1825); Hubbard's History ot New England (Boston, 1815); Mather's Magnalia Christi Americana (folio, London, 1702;) Beverly's History of Virginia, from 1587 to 1700 (London, 1705); Stith's History of Virginia (Williamsburg, 1747); W. Smith's History of New York (London, 1757); Hutchinson's History of Massachusetts (2 vols., 1764; 3d vol., London, 1828); Franklin's Historical Review of the Constitution and Government of Pennsylvania (London, 1759); Proud's History of Pennsylvania (1745); Smith's History of New Jersey, to 1721 (1765). Many of these works were written at a much earlier period than the date of their publication, and, though several were published in England, were from the pens of colonists. Of a more recent date are Jefferson's Notes on Virginia, Burk's History of Virginia (3 vols., 8vo., 1803); Ramsay's History of the Revolution in South Carolina (2 vols., 1785), and History of South Carolina (2 vols., 1809); Moultrie's Memoirs of the Revolution in North and South Carolina and Georgia (2 vols., 1802); Drayton's View of South Carolina (1802), and Memoirs of the Revolution in South Carolina (2 vols., 1821); Lee's Memoirs of the War in the South (2 vols., 8vo., 1812); Williamson's History of North Carolina (1812); Minot's History of Massachusetts (2 vols., 8vo., 1789); Bradford's History of Massachusetts, from 1764 (3 vols.); Belknap's History of New Hampshire (3 vols., 1792); Williams's History of Vermont (2 vols., 1809); Sullivan's History of Maine (1795); Williamson's History of Maine (2 vols., 1832); Yates and Moulton's History of New York (1825); Trumbull's History of Connecticut (2 vols., 1818); Flint's History and Geography of the Western States (2d edition, 2 vols., 1832); Stoddard's Sketches of Louisiana (1812); McCall's History of

Georgia (2 vols., 1816). Of works of a more general nature may be mentioned Ramsay's History of the U. States (3 vols., 1816), and his Universal History (12 vols., 8vo., 1819); Holmes's Annals of America, from 1492 to 1826 (2d edition, 1829, 2 vols., 8vo.); Marshall's History of the Colonies (2d edition, 1824); Pitkin's Political and Civil History of the U. States, from 1763 to 1797 (2 vols., 8vo., 1828); Douglass's Summary, Historical and Political, of the British Settlements in North America (2 vols., 1749); Trumbull's General History of the U. States to 1765; Thomas's History of Printing in America (2 vols., 8vo., 1810); Millar's Retrospect of the Eighteenth Century (2 vols., 8vo., New York, 1803); Wheaton's History of the Normans (Philadelphia, 1831); Lyman's History of the Diplomacy of the U. States (2 vols., Boston, 1828). In biography, we may mention Marshall's Life of Washington (2d edition, 2 vols., 1832); Ramsay's and Bancroft's Lives of the same; Tudor's Life of Otis; Wirt's Life of Henry; Lee's Lives of the Lees; Quincy's Life of Quincy; Wheaton's Life of Pinkney; Kirkland's Life of Ames; Franklin's and Jefferson's Autobiographies; Johnson's Life and Correspondence of Greene; Austin's Life of Gerry; Sparks's Life of Morris; Sanderson's Lives of the Signers of the Declaration of Independence (by different hands, 12 vols., Philadelphia, 1823—27); Belknap's American Biography; Sparks's Life of Ledyard; Irving's Life of Columbus; Biddle's Memoir of Sebastian Cabot, &c. —We have given this long list of works, not, certainly, on account of their literary value, but in general as the most authentic sources of information in regard to the U. States.

12. *Miscellaneous.* Some political works of merit have issued from the American press. Passing by those of earlier date, we shall mention here only the Federalist; Adams's Defence of the American Constitutions (London, 1787); Everett's Europe (1822), and America 1827), and Walsh's Letters on the Genius and Spirit of the French Government. The results of the expeditions sent out by government, at different times, to explore the interior of the continent, are given in Lewis and Clarke's Expedition to the Sources of the Missouri (2 vols., Philadelphia, 1814); Pike's Expedition to the Sources of the Mississippi (8vo., atlas, 4to., 1810); Long's Expedition to the Rocky Mountains (2 vols., 8vo., and atlas, 4to 1823); Keating's Narrative of Long's Expedition to the Source of St. Peter's River, &c. (2 vols., 8vo., 1824). Noah, Silliman, Griscom, Slidell, Dwight, Anderson, Bigelow, and others, have published their travels in different countries of Europe; Silliman, Dwight, Flint, Brackenridge, Schoolcraft, Schultz, &c., their travels in the U. States. Cooper's Notions of the Americans (1828) also belongs to this class of works. Dr. Cooper Cardozo, Raymond, Everett and Phillips have published works on political economy. In geography, Morse's Universal Geography, which has passed through many editions, and Worcester's Universal Gazetteer (2 vols., 8vo., 2d edition, 1823), deserve mention. In lexicography, Webster's Dictionary (2 vols., 4to., New York, 1828) is complete in respect to its vocabulary. Murray's English Grammar (1795) is the first considerable attempt of the kind in the English language: it has gone through numerous editions, and has been translated into German. John Quincy Adams, since president of the U. States, is the author of two volumes of Lectures on Rhetoric and Oratory (8vo., 1810). The most complete of the English encyclopædias, Rees's Cyclopædia, and Brewster's Edinburgh Encyclopædia, have been republished in the U. States, with large additions.

United States of Central America. (See *Central America.*)

Unity of a work is the correspondence of its parts in one harmonious whole. It is indispensable in every work of art. (For the unities in the drama, see *Drama.*)

Universalists; those Christians who believe in the final salvation of all men, in opposition to the doctrine of eternal punishment. There is, however, a great difference of opinion, in regard to the future state, among those who are called Universalists: some believe in a remedial punishment of limited duration, which will end in a universal restoration to goodness and happiness; others believe that all men will be happy after the dissolution of the body, but in different degrees, until the resurrection; and yet others hold that the future state of all will be alike perfect and happy immediately after death. (See *Sects.*)—*Universalists* is also an appellation given to those who teach, in opposition to the doctrine of absolute predestination, that Christ died for all, and not for an elect number, and that all men, therefore, may partake of salvation through belief in Jesus Christ. They are also called *hypothetical* Universalists, because they represent faith in Christ as a necessary condition of salvation.

Universals; the name given by the schoolmen to general notions, especially those of genera and species. It was a long-agitated question, whether general notions correspond to any real existences out of ourselves, or are derived merely from our conceptions; whether such existences are of a corporeal nature or not; and, in the latter case, whether they are separate from individual existences, or only within them. On these points, a dispute was long maintained between the nominalists and realists. (See *Nominalist.*)

Universe, System of. (See *System of the Universe.*)

Universities; establishments for instruction, in which all the most important branches of science are taught, and which have, at the same time, the right to confer honorary distinctions on scientific merit. They differ from academies (q. v.), which are societies of scholars for some common scientific purpose, without the connexion of teacher and learner, and without any distribution of dignities. The epithet *academical*, however, is often applied to both kinds of institutions. The Latin name *universitas* originated in the beginning of the thirteenth century, and signified, originally, the body of students; at a later period, the body of teachers and students assembled in one place. At a still later period, the expression *universitas literarum* was used to indicate that all the most important branches of science were to be taught in these establishments. With the ancients, the superior institutions for instruction were called *scholæ*, or *studia*. This latter appellation remained longest in Italy; and we find, in old authors, the expressions *studium Patavinum*, *Bononiense* (university of Padua and Bologna). The time of the origin of the first universities in Europe cannot be precisely ascertained. Previous to the age of Charlemagne, Europe had sunk into the greatest barbarism, in consequence of the migrations of the northern and eastern tribes, and the incessant and devastating wars which attended them. Charlemagne deserves the praise of having zealously striven to promote the cultivation of science throughout his vast dominions, with the aid of the Englishman Alcuin. (q. v.) By his command, schools were established in every convent and cathedral, intended chiefly for the education of clergymen; but young men of high families, not destined for religious orders, also received instruction in them. These convent and cathedral schools (q. v.) were, for a long time, the highest institutions for education in the countries where they were established. From them proceeded men like Adam of Bremen, Lambert of Aschaffenburg, &c. By degrees, the light of science, which had been so long obscured, began to shine more brightly; teachers arose in various places; an ardent thirst for knowledge collected numerous scholars around them, and a new kind of schools arose, the heads of which called themselves *rectores*. In Paris, several such teachers appeared in the twelfth century, who gave instruction chiefly in rhetoric, philosophy and theology. They were not all of the clerical order: even the celebrated Abelard (q. v.), when he opened his school, was not yet a clergyman. The advantages and the pleasures connected with a city like Paris, as well as the great reputation which these teachers acquired, drew a vast number of young men to that city; and thus the first European university grew up there. It was not founded by any monarch, nor endowed with any privileges. Teachers and scholars were entirely independent, and could change their residence at pleasure. They regulated their conduct by a constitution of their own making, which seems to have been tacitly acquiesced in by the government. Towards the end of the twelfth century, king Philip Augustus granted them immunity from the jurisdiction of the royal courts. Teachers and students formed themselves into corporations. Originally, each school had its own rector; but now, in 1206, a common rector was chosen: thus the whole mass of students and teachers came to constitute one body, called, on that account, *universitas*. The continually increasing number of teachers and students, however, made several ordinances of the government necessary for the maintenance of good order. A public insult offered, in 1229, to the students of Paris, and for which they could not obtain the required satisfaction from the court, made them so indignant, that a great part of them removed, with their teachers, from Paris. Their departure seems to have been severely felt, and the court strove to bring them back: by the mediation of pope Gregory IX, a reconciliation was effected; and the privileges of the university, which had been, so far, only acquiesced in, were increased and confirmed. About the time when the schools of Paris were established, perhaps even somewhat earlier, the first teachers of medicine appeared at Salerno, in Naples, and Montpellier The school of Salerno (*schola Salernitana*), at a later period, acquired celebrity, even in foreign countries, by the dietetic rules published under its name. At Bologna, the first instruction in Roman law was given. Irnerius (Werner) taught it here in the twelfth century with great applause. To all these places many young men resorted. The relations between the students and teachers, and between the schools and the government, were similar to those in Paris. The constitutions which they had made for themselves were confirmed, and their privileges even increased in the twelfth century. At the same time when the teachers and students constituted themselves into one body, the division of students into *nations* originated. These were associations of those who were natives of the same nation. They had their separate heads (*procuratores*), funds and regulations. This division into nations is an essential feature in the original constitutions of the oldest universities. The time of its origin cannot be accurately settled. The university of Paris, however, is the one in which the division into nations is earliest mentioned in diplomas and in historical works. In 1206, the division into four nations had become established. These were the French (in which, also, the students from Italy and Spain were included), the Picard, the Norman and the English. The last comprehended also the Germans, and all students from the north of Europe. At a later period, this *nation* was called the *German*. This number, probably at first merely accidental, was subsequently adopted also in the German universities. In the Italian universities, a similar division into nations took place. Equally uncertain with the origin of this division is also the origin of the distribution of academic honors, and the institution of distinct faculties. Probably they also originated in Paris, in the second half of the twelfth century. The first public teachers (Abelard in Paris, Irnerius in Bologna, and others) had received no invitation nor permission to teach from any one. But, subsequently, the state, as well as the members of the university, were careful that only well-qualified persons should lecture. Examinations were therefore established. He who was found qualified to teach, received a formal permission to lecture publicly, accompanied with certain symbols in the spirit of the age. The first academical degree was that of *baccalaureus* (see *Bachelor*); the second that of *licentiati*. (See *Licentiate*.) If the licentiate afterwards received the cap of *magister* (for which a certain sum was paid), he became a colleague of his former teachers, and participated in all their privileges. Such examinations and solemn distributions of academic honors (*promotiones*) were customary in Paris as early as the beginning of the thirteenth century. The title of *magister* (master) at Paris corresponded to that of *doctor* at Bologna. These *promotiones*, with the previous examinations, gave rise to the faculties. The *facultas artium* (the faculty of the seven liberal arts, or what is now called the philosophical faculty) existed long before. As these sciences had been taught in Paris from a very early period, the faculty of arts had the precedence of the others, which, however, has been subsequently denied to it. The other faculties were, as they still are, those of theology, law and medicine. The year 1259 is considered as the time of the establishment of faculties. In this year, the mendicant orders and secular clergy united, and formed a sort of corporation of teachers of theology. In 1260, the teachers of medicine imitated them, as did those of the canon law; and the four nations, which remained in the possession of all their privileges, formed the faculty of arts. The faculties elected deans from among their number, who, with the *procuratores* of the nations, represented the university. Among the public institutions which were established in the universities in the thirteenth and the following century, were the colleges (*collegia*), buildings in which students, especially poor ones, might live together, under superintendence, without paying for their lodging. In some cases, they also received their board gratis, or had still further allowances. The first and most distinguished of these colleges were at Paris; but here, as in other places, they degenerated by degrees, and did not remain the asylum of poor students. In England, the colleges (q. v.) have acquired a greater extent and importance:—in fact, there, the whole university consists of a number of separate colleges, in which the business of instruction is mainly carried on. In German universities, something similar was introduced, namely, the *bursæ* (charitable establishments, in which students could live for a very low rent). The name *bursæ* was also given to certain boarding-houses, established by professors. Those who lived in such *bursæ* were called *bursarii;* hence the German word *Bursche*. The first teachers of the ancient universities were not paid by government: they were supported entirely by fees received from the students. A teacher of high reputation could then acquire wealth, as the number of students was generally very great. At a later period, scholars sometimes received presents from the magistrates of a town, to induce them to remain in it: at a still later period, a fixed salary was given to them. In the beginning of the sixteenth century, in most universities, the number and salaries of the professors were increased; but they were now enjoined to deliver public lectures *gratis*. In the Protestant German universities, which advanced far beyond the Catholic, these public lectures were, after a time, found insufficient, and more lectures were delivered *privatim;* that is, these were lectures for which fees were received from students, so that a stronger spirit of competition was excited among the teachers. These lectures delivered *privatim* are, at present, far more numerous and important than the public ones in German universities. Before the invention of the art of printing, in the fifteenth century, the professor dictated and the students wrote after him. Much time was lost, and a course of lectures in a particular branch always lasted a long term. Manuals became frequent after printing was invented. What has been said respecting the origin of the ancient universities of France and Italy, is true also of those of England—Oxford, founded about 1200, and Cambridge, about the same time. The disturbance which took place in the university of Paris, as mentioned above, in 1229, was advantageous to the English universities. Several distinguished teachers of Paris accepted the invitation of Henry III of England, and went to Oxford. The first universities founded in Germany were those of Prague, 1348, and Vienna, 1365, both after the model of that of Paris: in both the division into four nations was adopted. This circumstance caused the decline of the former, and the foundation of a new one. The emperor Charles IV had divided the teachers and students, when the university of Prague was founded, into the Bohemian, Polish, Bavarian and Saxon nations. The Germans, therefore (as the Polish nation consisted chiefly of German Silesians), had the advantage over the Bohemians; and, as these were unwilling to suffer their oppressions, John Huss and Jerome of Prague induced the emperor Wenceslaus to make three nations of the Bohemian and one of the two German. Several thousand students and teachers withdrew immediately, and gave rise to the university of Leipsic, in 1409, where they were divided into four nations, the Misnian, Saxon, Bavarian and Polish. None of the other German universities, founded in the fifteenth century, adopted the division into nations. Universities were now expressly established, and not left to grow up of themselves, as before. For almost three centuries, the popes continued to erect these institutions, and exercised the right of protecting and of superintending them. Monarchs who wished to establish a university, requested the papal confirmation (which never was denied), and submitted to the authority which the Roman see arrogated over them. Wittenberg was the first German university which received its confirmation (in 1502), not from the pope, but from the German emperor; but even this institution eventually requested the papal confirmation. Marburg was established in 1525, without papal or imperial confirmation: the latter, however, was subsequently given. Even Göttingen, founded in 1734, obtained imperial privileges, after the model of those of Halle. The unhappy thirty years' war did much injury to the German universities; but, since that period, they have advanced beyond those of any other country; and it may be said that the principal part of the liberty left to the Germans has been academical liberty; hence, also, their abuse of it; hence, too, the fondness with which a German recalls his life at the university; and hence the students' jealousy of their privileges. Though the organization of the German Protestant universities is, in general, much superior to that of any others, we do not think it desirable to place students in precisely the same relations in other countries, particularly those in which men's energies are not cramped by arbitrary political institutions. Germany has more universities than any other country. After the *bursæ* had been established, they degenerated in a great degree. Some *bursæ* were not charitable institutions, and the students had to pay a fee to the person whose duty it was to superintend their conduct. These superintendents often allowed their wards to indulge in all kinds of vices, in order to obtain many students. The reformation broke out, and its regenerating power was felt in the scientific institutions. The students saw the corruption of the *bursæ*, and elected their own superintendents, to each of whom was committed the charge of the students coming from a particular district or part of Germany: thus the *Landsmannschaften* (countrymanships) originated. These, also, soon degenerated. All the students divided themselves into *Schorists* (*preceptores*) and *Pennale* (pen-cases.) (See *Pennalism.*) The latter were abused by the former, and, when they succeeded to their places, abused those who came after them. (See Schöttgen's *History of Pennalism*, 1747.) This lasted almost 100 years. In the beginning of the eighteenth century originated the orders. The chiefs of the orders were called *seniors*. They made their own constitutions, called *comments*. The orders generally comprised but few members, and, in their turn, degenerated, owing partly to the spirit of the time, and partly to the circumstance that the students had a particular academical jurisdiction. New *Landsmannschaften* were created to oppose them, which were chiefly founded on very misconceived notions of honor. The abuses to which these institutions led continued until 1813, when the feeling that Germany ought to be united, inspired all classes with a common sentiment of patriotism; and, after those individuals who had fought and bled for their common country returned to the universities, they felt the petty character of the *Landsmannschaften*, and the *Burschenschaften* were established—unions of all the students of a university, without regard to the particular German territory from which they came. Better morals and notions of honor became prevalent; but, as the liberal principles, which animated all Germany, were manifested in a particular degree by the young men at the universities, the German governments became suspicious, and abolished the *Burschenschaften*.[*]—In order to give an idea of the character of the English universities, we have extracted the following observations from an account of Oxford university, in the English Quarterly Journal of Education, No. III, for July, 1831. Oxford is an establishment for the purposes of education which corresponds to a federal body united for political purposes. As, in this latter case, the several states have separate jurisdictions, separate duties, and, to a certain extent, separate interests, so the several colleges and halls which compose the academical body, have each its own private regulations for the education of its members, but all contribute to the university education. This may be brought under the heads of public examinations and college preparation. In its early constitution, and in the gradual additions which for many ages were made to it, the system now followed in the German universities was kept in view, and professorships or readerships in the different arts and sciences were established; but these university officers are no longer the main sources of instruction. The demand for instruction created by the degree examination, is met almost exclusively by lectures delivered in the several colleges and halls, or, rather, by private tutors in the colleges and halls; so exclusively, indeed, that, although some knowledge of Greek is essential for a degree, and a considerable proficiency for the higher class degrees, the Greek professor has no lectures. What is actually required for a degree of bachelor of arts, is, that the student should display some acquaintance with the facts and doctrines of the Christian religion, and especially with the peculiar tenets of the church of England, as set forth in its articles; some proficiency in the Greek and Latin languages, in one or more of the ancient philosophical treatises, or, in lieu of this, in a portion of ancient history; some knowledge, also, either of the elements of logic or of the elements of geometry. The statute, however, contemplates the probability of a much higher standard of qualification in a portion of the students; and for these it provides honors additional to that of a mere degree. Their names are printed, arranged in four classes, according to a fixed standard of merit for each class.

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[*] The general organization of a German university is as follows:—A number of *professores ordinarii* are appointed for the various branches. They divide themselves into four *faculties*, each having a dean annually chosen by themselves from among their number. All these professors generally form the senate, at the head of which is the rector, who is chosen annually. They have jurisdiction over the students, in regard to small offences and matters of police, and make the general provisions respecting instruction, with the consent of the government. Professors in most universities are appointed by the government. Besides these professors, there are an indefinite number of *professores extraordinarii*, for the same branches, or for particular parts of them. They receive small salaries, and are the persons to whom the government look to fill vacancies. They are generally persons who have distinguished themselves, and whose talents the government wish to secure. In Berlin, there are a great many of these extraordinary professors. The last class of lecturers are the *docentes*, or licentiates, who, after undergoing an examination, have obtained permission to teach (*licentia docendi*). They receive no salary. Any person can request to be examined by the faculty in this way, and thus capacitate himself to teach. From them the *professores extraordinarii* are ordinarily taken. Every person in these three classes can lecture upon whatever

The candidate is permitted to name the books in which he wishes to be examined; and the examiners are, besides, at liberty to examine in any books which they may select. The following may serve as a specimen of the ordinary lists admitted by examiners:—Virgil, Cicero *De Officiis*, the five last books of Herodotus, Porson's four plays of Euripides, and some work on logic. For the highest

subject he may choose, the professors being only obliged to deliver lectures also on the branches for which they are particularly appointed. Thus we constantly find theologians lecture on politics, philosophers on theological subjects and statistics; theologians on philology, &c. Very often three or four courses are delivered on the same subject. The German student, in the Protestant universities, is left at full liberty to choose the lectures which he will attend. No official examination takes place during his term of study. The only regulation is that, in the case of most sciences, he is required to attend certain lectures, and study full three years, if he wishes to obtain an appointment, practise a profession, &c., if he is not specially exempted from so doing. If he wishes to practise medicine, he must study in Prussia four years. The German student usually divides his term of study among two or more universities; but whilst he is thus left almost at full liberty while at the universities, he must go through a severe examination, particularly in Prussia, if he wishes to become a clergyman, statesman, practise as physician, lawyer, or teacher in a superior school. These examinations are both oral and in writing, and the successive steps of promotion are attended with new examinations. It may be interesting to the reader to see the following list of lectures delivered at the university of Berlin, one of the first in Germany.

Catalogue of Lectures which were delivered in the University of Berlin during the Winter Term of 1829—30, beginning with Oct. 29, and continuing about six Months.

[We have given the names of the professors in order to show how many lectures are delivered by the same professor.]

THEOLOGY.

Theological encyclopædia and methodology (that is, general survey of theological science, and the proper method of studying it), by Prof. Hengstenberg, once a week. Historico-critical introduction to the Old Testament and the Apocrypha, by Lic. Uhlemann, four times a week. The exercises of an exegetical society on the passages of the prophets respecting the Messiah, are directed by the same professor, once a week, gratis. Genesis explained in Latin, four times a week, gratis. Principal parts of Genesis explained by Prof. Bellermann, twice a week. The Psalms explained, four times a week, by Dr. Benary. The Book of Job, Prof. Hengstenberg, four times a week. Biblical antiquities, by Lic. von Gerlach, four times a week. Introduction to the New Testament, by Lic. Rheinwald, four times a week. The Gospel of John, by Prof. Neander, five times a week. The First Epistle of Paul to the Corinthians, by Prof. Schleiermacher, four times a week. The Epistles to the Galatians, Ephesians, Philippians and Colossians, by Lic. von Gerlach, four times a week. The two Epistles to the Corinthians, by Lic. Lommatyzsch, in Latin, five times a week. The Epistle of James, in Latin, the same, once a week, gratis. The exercises in disputation of the two exegetic societies are continued by the same, gratis. Epistles of John, by Lic. Rheinwald, twice a week, gratis. The life of Christ, by Prof. Schleiermacher, five times a week. Ecclesiastical history, from the time of Gregory VII, by Prof. Neander, five times a week. Introduction to scientific theology, both in a moral and doctrinal point of view, by Prof. Marheinecke, five times a week. Homiletics (all that relates to the preparation and delivery of religious discourses), by Prof. Strauss, four times a week. Liturgics (the knowledge of liturgies), by the same, gratis. Exercises in preaching, directed by the same, twice a week, gratis.

LAW.

General survey of legal science (*Juristische Encyclopædie*), by Prof. Biener and by Dr. Pütter, in Latin. Natural law, by Prof. Schmalz. Natural law, or philosophy of law, in connexion with the general history of law, by Prof. Gans, five times a week. Institutes of the Roman law, by Prof. Klenze, six times a week, and Prof. Gans, five times a week. Pandects, by Prof. Savigny. Law of inheritance, by Dr. Moosdorfer-Rossberger and by Dr. Radorff. External history of Roman law, by Dr. Moosdorfer-Rossberger, twice a week, gratis. History of the Roman civil process, by Dr. Pütter, two hours a week, in Latin. Ulpian's fragments explained by Dr. Radorff, twice a week, gratis. Canon law, by Prof. Schmalz, five times a week; by Dr. Laspeyres, five times a week; Dr. Moosdorfer-Rossberger, four times a week; Dr. Pütter at twelve o'clock, and Dr. Steltzer at three o'clock. History of the German empire and law, by Prof. Homeyer. History and antiquities of German law, with a short survey of the history of the empire, by Prof. Phillips. German private and feudal law, by Prof. von Lancizolle and by Prof. Phillips. Feudal law, by Dr. Moosdorfer-Rossberger, four times a week. Forest and game law, by Dr. Laspeyres. Criminal law, by Prof. Biener, with the criminal process, five times a week; Prof. Jarcke, the same, six times a week. History of criminal law, by Prof. Klenze, twice a week, gratis. On remarkable criminal cases, by Prof. Jarcke and Dr. Laspeyres. German territorial and federative law, by Prof. Schmalz, six times a week, gratis. Ancient constitution of the empire, and constitution of the confederacy, by Prof. Lancizolle. On the constitution of Great Britain, by Prof. Phillips, once a week. Common and Prussian civil process, by Prof. Schmalz, four times a week; Prof. Jarcke, five times a week; Dr. Moosdorfer-Rossberger, four times, and Dr. Radorff, four times a week. Practical exercises directed by Prof. Schmalz, in connexion with his lectures on the criminal process, on Saturdays. Dr. Moosdorfer-Rossberger offers to take charge of examinations and reviews of past studies.

MEDICINE.

Medical encyclopædia and methodology, by Prof. Casper, once a week, gratis. History of medicine, by Prof. Hecker, twice a week, gratis. History of accouchement, by Dr. von Siebold, once a week. Lives and doings of great physicians, by Dr. Damerow, once a week, gratis. Ex-honors in classes, the catalogue usually comprises two or more treatises of Aristotle, with the addition, occasionally, of some of Cicero, or some parts of Plato, Herodotus and Thucydides, and often the whole or part of Xenophon's Hellenics, and Polybius; a selection of Greek plays, and sometimes Pindar; a portion of Latin history, most commonly two decades of Livy; two or more Latin poets, which are

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planations of the aphorisms of Hippocrates, continued by Prof. Bartels, once a week, gratis. Anatomy, six times a week, by Prof. Rudolphi. Complete anatomy, by Prof. Schlemm, four times a week. Osteology, by Prof. Knape, four times a week. Syndesmology, the same, twice a week, gratis. On aponeuroses, by Prof. Schlemm, twice a week, gratis. Splanchnology, by Prof. Knape, four times a week. Anatomy of the organs of the senses and those of the fœtus, by Prof. Rudolphi, twice a week, gratis. Practical exercises in anatomy, directed by Profs. Knape and Rudolphi. Anthropology, by Prof. Kranichfeld, twice a week. Physiology, by Prof. Schultz, four times a week. Complete physiology, by Prof. Eck, six times a week. The first part of the theoretico-medical institutions, containing the elements of physiology, by the same, four times a week. Comparative physiology, by Prof. Horkel, six times a week. A survey of the history of life, the formation and propagation of organic bodies, by Dr. Brandt, once a week, gratis. Pathology, by Prof. Hufeland, junior, four times a week. General pathology, by Prof. Hesker, four times a week. Particular pathology, the same, six times a week. The same according to his own system, by Prof. Reich, six times a week. Pathological anatomy, by Prof. Rudolphi, four times a week. On regular and monstrous formations in natural bodies, by Dr. Ratzeburg, twice a week. Semeiotics (the doctrine of symptoms), by Prof. Hufeland, junior, twice a week, gratis. Pharmacology, by Prof. Link, six times a week. The same, in connexion with natural history and materia medica, explained by frequent demonstrations, with Dr. Ratzeburg and Dr. Brandt: the former teaches the mineralogical and zoölogical part, three times a week; the latter the botanical part, three times a week. Doctrine of physics, by Prof. Osann, six times a week. The same explained by exhibiting officinal plants and minerals, by Prof. Schultz, five times a week. Practical lectures on medicines, by Dr. Sundelin, four times a week. On officinal and poisonous plants, by Prof. Schultz, twice a week, gratis. On the mineral waters of Germany, by Prof. Osann, twice a week, gratis. The art of preparing recipes, treated generally and particularly, by Prof. Casper, twice a week; practical exercises continued. General therapeutics, by Dr. Oppert, three times a week. Dietetics and macrobiotics (q. v.), by Prof. Hufeland, senior, twice a week. Special pathology and therapeutics (q. v.), by Prof. Bartels, five times a week. The same, by Prof. Wagner, six times a week. Therapeutics of acute and chronic diseases in particular, by Prof. Horn, four times a week. Nosological therapeutics particularly treated, by Prof. Wolfart, four times a week. Second part of particular therapeutics, by Prof. Hufeland, junior, six times a week. On the diseases appearing during wars, in camps as well as in cities, by Prof. Wolfart, twice a week. The doctrine of mental disorders, with remarks, theoretical and practical, on their cure, by Dr. Damerow, four times a week. Doctrine of the diagnosis and cure of syphilitic diseases, by Prof. Horn, twice a week, gratis. The same, by Dr. Oppert, twice a week, gratis. Pathology and therapeutics of diseases having a material origin, by Dr. Sundelin, twice a week, gratis. Doctrine of the diseases of children, by Prof. Casper, twice a week, gratis. The same, by Prof. Reich, gratis. Doctrine of the diseases of children and women, by Dr. Friedländer, twice a week. Doctrine of the diseases of the eye, by Prof. Jüngken, five times a week, gratis. Instruction in operations on the eye, the same, *privatissime*.* Anatomy, physiology, pathology and therapeutics of the human eye, in connexion with the operations on it, by Prof. Kranichfeld, three times a week. General and special surgery, by Prof. Jüngken, six times a week. General surgery, by Prof. Kluge, twice a week. Akiurgy, or the doctrine of all surgical operations, by Prof. von Gräfe, four times a week. The same, by Prof. Rurt, six times a week. Operations on the dead subject are separate from these. On fractures and dislocations, by Prof. Kluge, once a week. Complete view of the means of curing diseases of the teeth, by Dr. Hesse, twice a week. All that relates to birth (*Geburtskunde*), by Prof. Busch, five times a week. Elements of midwifery, by Prof. Kluge, twice a week, gratis. The same; lectures on theoretical and practical obstetrics; and at two other hours exercises take place. Prof. Busch proposes to undertake a course of obstetrical operations, with exercises on the model. Prof. Busch will have, on Saturdays, an obstetrical examination. Theoretical and practical obstetrics, by Dr. Friedländer, three times a week. The same, by Dr. von Siebold, four times a week. He offers also to direct the exercises on the model. Clinical medical lectures in the Charité hospital, daily, by Prof. Bartels. Clinical exercises in the royal polyclinical institute, directed by Prof. Hufeland, senior, with Profs. Osann and Busse. Clinical directions for his hearers, by Prof. Wolfart. Directions for medical and forensic-medical practice, given by Prof. Wagner, six times a week. Clinical lectures on surgery, and diseases of the eye, in the royal clinico-surgical institute of the university, directed by Prof. Gräfe, four times a week. Practical exercises at the sick-bed in surgical clinics, in the Charité hospital, directed by Prof. Rurt, four times a week. Polyclinics, by the same, every day. Practical exercises at the sick-bed of patients with disorders of the eye, in the Charité hospital, directed by Prof. Jüngken, five times a week. On venereal diseases, Prof. Kluge will give, twice a week, clinical instruction in the Charité hospital. Obstetrical clinics in the royal lying-in hospital, and the polyclinics connected with it, directed four times a week, by Prof. Busch. Obstetrical clinics, by Dr. Friedländer, three times a week. Forensic anthropology, by Prof. Knape, three times a week. Forensic medicine for physicians and jurists, with practical exercises in the drawing up of opinions, &c., by almost always Virgil, Horace, Lucretius or Juvenal. Besides the examination in these books, the student is obliged to perform exercises in English, Latin and Greek, in prose and in verse, at the discretion of the examiners. The mathematical examinations have been, for the last three or four years, conducted principally by means of printed questions, answered in writing. A candidate for the

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* Lectures in the German universities are either *publice* (gratis), *privatim* (the general lectures, paid for by the student, from one louis d'or to five and six: these are meant if nothing is said in the catalogue), or *privatissime* (which are only for a few, who may choose to attend: at these, the price is higher, and the manner of instruction more familiar).

Prof. Casper, three times a week. The same, by Dr. Barez, four times a week. Medical police, by Prof. Wagner, twice a week, gratis. Dr. Sundelin offers to take charge of reviews of all parts of medical study. Veterinary art, by Dr. Reckleben, three times a week. Doctrine of pestilential disorders among all domestic animals, in connexion with forensic veterinary medicine, by the same, three times a week.

Philosophical Sciences.

Philosophical method, and the general survey of sciences, by Dr. Michelet, in connexion with an introduction to the last systems of philosophy since Kant, four times a week, gratis. Foundation of philosophy, or the theory of all knowledge, by Dr. Schopenhauer, three times a week. Logic, five times a week, by Prof. Ritter. Logic, and a general survey of philosophy, by Dr. Beneke, four times a week. Logic and metaphysics, by Prof. Henning, five times a week. Ethics, by Prof. Ritter, four times a week. Psychology, and doctrine of mental diseases, by Dr. Beneke, five times a week. Psychology, six times a week, by Dr. von Keyserlingk. On the knowledge of God, by Prof. Ritter, once a week, gratis. Æsthetics, or general doctrine of arts, by Prof. Tölken, four times a week. Fundamental ideas of aesthetics, by Dr. Keyserlingk, four times a week. History of philosophy, by Prof. Hegel, five times a week. Critical history of distinguished metaphysical systems, by Dr. Beneke, once a week. Philosophy of history, by Prof. Stuhr, five times a week.

Mathematical Sciences.

Differential calculus, by Prof. Dirksen, three times a week. Analytical statics, the same, three times a week. Application of the integral calculus to geometry, by the same, once a week, gratis. Calculation of probabilities, by Dr. Dirichlet. Analysis of infinites, by the same. Introduction to algebra and analysis, once a week, gratis, by Prof. Ohm. Analytical plane and spherical trigonometry, also analytical geometry, four times a week, by the same. Differential and integral calculus, by the same, four times a week. Algebra, six times a week, by Prof. Ideler. On conic sections, three times a week, by the same. Planimetry, twice a week, by Prof. Grüson. Theoretical astronomy, three times a week, by Dr. Encke. Cosmography, twice a week, by Prof. Oltmanns.

Natural Sciences.

General physics, three times a week, by Prof. Erman. Magnetism and electricity, the same, three times a week. The first part of mechanical physics, four times a week, by Prof. Fischer. Experimental physics, four times a week, by Prof. Hermbstädt. The same, by Prof. Turte, twice a week. Elements of physics and chemistry, with experiments, by the same. General theoretical and practical chemistry, with experiments, six times a week, by Prof. Hermbstädt. Theoretical and practical pharmacy, or doctrine of the knowledge and preparation of chemical medicines, five times a week, by the same. Zoöchemy, once a week, by Prof. Mitscherlich, gratis. Experimental chemistry, four times a week, by the same. Theoretical chemistry, with particular reference to technology, five times a week, by Prof. Schubarth. Introduction to chemistry, by the same, once a week, gratis. Examinations in chemistry, by the same, three times a week. On chemical operations, once a week, by Prof. Hermbstädt. Pharmaceutic chemistry, three times a week, by Prof. Rose. On some organic officinal preparations, once a week, gratis, by the same. Exercises in chemical analysis, by the same, daily. General zoölogy, six times a week, by Prof. Lichtenstein. Natural history of the ruminant animals, by the same, twice a week, gratis. Natural history of the mammalia, by Dr. Wiegmann, twice a week, gratis. General zoölogy, five times a week, by the same. General entomology, twice a week, by Prof. Klug, gratis. On the laws of descriptive botany, once a week, gratis, by Prof. Hayne. Physiology of vegetables, especially of trees and shrubs, three times a week, by the same. On cryptogamic plants, gratis, by Prof. von Schlechtendal. On nutritive, officinal and poisonous plants, according to the natural families, four times a week, by the same. Mineralogy, six times a week, by Prof. Weiss. Descriptive crystallography, by the same, four times a week. The mineralogical part of the knowledge of soils for officers of the forests, twice a week, by the same.

Political and Administrative Sciences.

Public law and politics, by Prof. von Raumer, four times a week. On the modern public law and constitutions of government in both hemispheres, by Prof. Gans, once a week, gratis. *Cameral-Wissenschaft* (science of administration), four times a week, by Prof. Schmalz. History of the Prussian state since the beginning of the seventeenth century, with particular reference to the progress of public law, by Prof. von Henning, once a week, gratis. General statistics of Europe, four times a week, by Prof. Hoffmann. Statistics of the German confederation, twice a week, by Dr. Stein. Statistics of Prussia, twice a week, gratis, by Prof. Hoffmann. Public and administrative law of Prussia, in connexion with Prussian statistics, four times a week, by Prof. von Henning. Science of finances, or doctrine of the administration of public revenue, four times a week, by Prof. Hoffmann. Agricultural preparatory sciences, twice a week, by Prof. Störig. Science of agriculture, with particular reference to the wants of the *cameralist*, three times a week, by the same. On cattle, three times a week, by the same. General survey of forest sciences, four times a week, by Prof. Pfeil. Knowledge and care of forests in a politico-economical respect, three times a week, by the same. Valuation and management of forests, three times a week, by the same. The same lecturer is ready to conduct an examination in all forest sciences, six times a week. *Cameral* chemistry, or application of chemistry to agriculture, the for-first class may be stated generally to have acquired a knowledge of, 1. the elements of analytical geometry and trigonometry; 2. the differential and integral calculus and its applications; 3. mechanics, including the principles of its application to the solar system, embracing the substance of the three first sections of Newton's *Principia*, which are also read in the original forms; 4. the principles of hy-

est sciences, and the mechanic arts, with experiments, three times a week, by Prof. Hermbstädt.

History and Geography.

History of antiquity, four times a week, by Dr. E. A. Schmidt. History of the middle ages, four times a week, by Prof. Wilken. Modern history, four times a week, by Prof. von Raumer. History of the eighteenth century, twice a week, gratis, by Dr. E. A. Schmidt. History of Prussia, from the beginning of the seventeenth century to the year 1813, six times a week, by Prof. Stuhr. History of the war of liberation, during 1813—15, twice a week, by the same. Historico-critical exercises are held once a week, by Prof. Wilken. General geography, five times a week, by Prof. Ritter. The same, by Prof. Zeune, twice a week. Hydrography and physiography of the West Indies and the neighboring coasts, once a week, by Prof. Oltmanns, gratis. Determination of geographical longitude and latitude from astronomical observations, twice a week, by the same.

History of Art.

History, principles and monuments of Greek architecture, three times a week, by Prof. Tölken. History, principles and monuments of architecture in the middle ages, from the times of Justinian to the sixteenth century, by the same, twice a week. History of architecture among the Greeks, twice a week, gratis, by Prof. Hirt. Principles of the fine arts, by the same. On the art of painting among the ancients, gratis, once a week, by Prof. Tölken.

Philological Sciences, &c.

General survey of the philological sciences and the method of studying them, four times a week, by Dr. Rötscher. General history of the literature of antiquity, the middle ages, and of modern times, five times a week, by Prof. Hotho. Greek antiquities, with particular reference to politics and the administration of justice, five times a week, by Prof. Böckh. Agamemnon and the Choephori of Æschylus, three times a week, by Prof. Lachmann. The Seven against Thebes of Æschylus, four times a week, by Dr. Lange. The Philoctetes and Antigone of Sophocles, in connexion with an introduction, on the nature and history of the Greek tragedy, four times a week, by Dr. Heyse. The Clouds of Aristophanes, twice a week, by Dr. Rötscher, gratis. The Nicomachic ethics of Aristotle explained in connexion with an introduction to the philosophy of Aristotle in general, twice a week, by Dr. Michelet. Thucydides, by Prof. Bekker, twice a week. Practical exercises in Latin and Greek, directed by the same. Latin style taught by Prof. Zumpt, four times a week. On Catullus, and the lyrical poetry of the Romans in general, with explanations of select poems of Catullus, twice a week, by Dr. Heyse. Cicero's fifth book against Verres, explained twice a week, gratis, by Prof. Zumpt. Histories of Tacitus, four times a week, by Böckh. Ancient geography of Palestine, once a week, gratis, by Prof. Ritter. Hebrew grammar, by Dr. Uhlemann, with a grammatical explanation of the book of Joshua, twice a week, gratis. Exegetical exercises in the Old Testament, directed by Dr. Benary, and difficult parts of the Hebrew grammar explained, three times a week, gratis. Chaldee grammar, with an explanation of select parts of the Chaldee Bible and Targums, by the same, three times a week, gratis. Elements of Syrian grammar, twice a week, by Prof. Hengstenberg. Arabian grammar, with explanation of the Arabian chrestomathy of Kosegarten, three times a week, by Prof. Wilken. Select Arabian historians and poets explained, by Dr. Benary, four times a week. Grammar of Sanscrit, three times a week, gratis, by Prof. Bopp. Select passages of the *Mahâ-Bhârata* explained, by the same, twice a week, gratis. Persian grammar, by Wilken, once a week, gratis. Ancient German and Northern mythology, twice a week, gratis, by Prof. von der Hagen. On the ancient northern Edda-songs of the Nibelungs, the same, four times a week. History of the literature of the middle ages and modern times, four times a week, by the same. Elements of the old, and middle High German grammar, five times a week, by Prof. Lachmann. Dante's Purgatory explained, twice a week, by Prof. F. W. V. Schmidt, gratis. History of modern poetry, four times a week, by the same. On the latest period of irony and mysticism in poetry and æsthetics, or on Frederic von Schlegel's *Novalis*, L. Tiek's and Solger's writings, once a week, by Prof. Hotho. Dante's *Divina Comedia* is explained in the Italian language, by Mr. Fabbrucci, gratis. Italian authors, such as his hearers may select, explained, by the same, four times a week. Elements of Italian grammar, *privatissime*, by the same. Shakspeare, by Dr. von Seymour. Private instruction in the English language, by the same. Some French tragedies explained, and the history of the French tragedy given in French, by Mr. Franceson. Instruction, *privatissime*, in French, Spanish and Italian, by the same.—The director Klein superintends the academical choir for church music, in which students can take part, gratis. Instruction in fencing and vaulting, by Mr. Felmy and Mr. Eiselen. The latter also gives instruction in gymnastics in general. Instruction in riding in the royal and several private riding schools.

Public Learned Institutions.

The royal library is daily open for students. The observatory, the botanic garden, the anatomical, zoötomical and zoölogical museum, the collection of minerals, of surgical instruments and bandages, of casts and works of art, &c., are used in the lectures, and can be visited by the students. Prof. Hengstenberg directs the exegetic exercises of the theological seminary; the exercises in ecclesiastical history and the history of dogmas are directed by Profs. Marheinecke and Neander. In the philological seminary, Prof. Böckh will hear the students explain Demosthenes, and direct the other exercises of the same. Prof. Lachmann will hear the students explain the odes of Horace.

drostatics, optics and plane astronomy. The examinations take place twice a year. Prizes are given for the encouragement of composition in prose and verse, in Latin and English. There are also public scholarships, which operate as rewards and encouragements of general proficiency or particular acquirements. These include classical literature, mathematics, Hebrew and law. The university also affords facilities for the acquirement of various branches which do not enter into the qualifications for a degree. Thus the several professors of geology, chemistry, and many other branches of science, are always provided with classes, often with numerous ones.—We now proceed to the college preparation for the public examinations. It is this that really constitutes the Oxford education. The process of instruction in the colleges is by means of recitations. Every head of a house appoints a certain number of tutors for this purpose. Questions are put by the tutor, and remarks made by him on the book which is the subject of study. He also gives directions respecting the proper mode of studying. The students usually attend two, three or four tutors, who thus give instruction in different branches. The college tutor, moreover, has interviews, from time to time, with his pupils, separately, for the sake of ascertaining the individual's state of preparation for the public examination, assisting him in his difficulties, &c. Besides these college tutors, however, there are private tutors, who superintend the studies of individuals, and prepare them for attendance on the exercises of the college tutors. These private tutors are particularly useful to that large class of students who come to college insufficiently prepared. The course of college instruction closes, at the end of each term, with a formal examination of each member separately, by the head and tutors, who assemble for this purpose. This summing up of the business of the term is called, in the technical language of the place, *collections*, or *terminals*. Each student presents himself in turn, with the books in which he has received instruction during the term, and, in many colleges, with the essays and other exercises which he has written, his analyses of scientific works, abridgments of histories, and the like. In some colleges, the students are required to present, for their examination, some book, also, in which they have not received instruction during the term. Besides the other studies pursued in the colleges, the students write weekly short essays on a given subject, occasionally interchanged with a copy of Latin verses, for those skilled in versification. The liberality of donors has enabled the colleges to provide indirectly for the promotion of study by means of exhibitions, scholarships and fellowships. Every college and hall examines, if it thinks fit, its own candidates for admission, and pronounces, each according to a standard of its own, on their fitness or unfitness for the university. The university has public examinations, called *responsions*, for members who have been matriculated not less than six, nor more than nine terms. These are conducted principally with a view to ascertain the elementary knowledge of the student, rather than his progress in those branches of knowledge which he is supposed to be pursuing. In regard to the expenses, i.e. the necessary expenses, of a student at Oxford, the Journal from which we have extracted the preceding remarks states, that the ordinary college account for the year, including university and college fees of all kinds, postage, boarding, lodging, washing, coals and servants, is oftener short of £80 or £90 than above £100.—For further information respecting the English universities, see *Oxford*, *Cambridge*, *King's College*, *London University* (in article *London*), and the article *College*.—The word *university* was used in France, during the period of the empire, to designate the collective body of the higher institutions of education, consisting of twenty-six academies in the principal cities, all under the control of a common head.—In the U. States, the word *university* is sometimes applied to the colleges (q. v.); but there are no institutions in the country properly deserving the name.—The following is a list of the universities in the different countries of Europe; but the reader should be aware of the immense difference between the establishments bearing this name; for instance, those of Berlin and Göttingen, on the one hand, and a Spanish university, on the other, in which, a short time since, it was prohibited to lecture on philosophy. In general, it may be said, that, with the exception of Paris, the Catholic universities out of Germany are very far behind the Protestant universities. (See Cousin's *Letters to the French Minister of Instruction and Worship*; count Montalivet on the state of public instruction in Germany; also Russell's *Tour in Germany*, in 1820, 21 and 22, and Dwight's *Travels in the North of Germany*, in 1825 and 1826.)

Austria has eight universities.

	Founded.
Vienna,	1365
Prague,	1348
Padua,	1228
Pavia,	1361
Pest,	1465
Lemberg,	1784
Innspruck,	1815
Grätz,	1826

Prussia, six.

Berlin,	1810
Bonn,	1818
Breslau,	1702
Greifswalde,	1456
Halle,	1694
Königsberg,	1544

Besides Catholic theological and philosophical faculties at Münster and Braunsberg.

Bavaria, three.

Würtzburg,	1403
Erlangen,	1743
Munich,	1810

Saxony, one.

Leipsic,	1409

Hanover, one.

Göttingen,	1734

Würtemberg, one.

Tübingen,	1477

Baden, two.

Heidelberg,	1386
Freiburg,	1457

Electoral Hessia, one.

Marburg,	1527

Hesse-Darmstadt, one.

Giessen,	1607

Mecklenburg, one.

Rostock,	1419

Saxon Duchies, one.

Jena,	1557

France, twenty-six.*

Paris,	about 1200
Strasburg,	1538
Toulouse,	1238
Aix,	1409
Amiens	
Angiers	
Besançon,	1564
Bordeaux,	1447
Bourges	
Caen,	1433
Cahors	
Clermont	
Dijon,	1722
Douai	
Grenoble	
Limoges	
Lyons,	1300
Metz	
Montpellier,	1289
Nancy	
Nismes	
Orleans	
Pau	
Poitiers,	1431
Rennes,	1801
Rouen,	1801

Great Britain, nine.

Cambridge,	1229
Oxford,	1263
Edinburgh,	1582
St. Andrew's,	1412
Glasgow,	1454
Aberdeen, { King's college,	1506
Marischal,	1593
Dublin,	1320
King's college,	1829
London university,	1825

The *Kingdom of the Netherlands*, three.

Leyden,	1575
Gröningen,	1614
Utrecht,	1636

Belgium, three.

Louvain,	1826
Liege,	1816
Ghent,	1816

Russia, eight.

Petersburg,	1821
Moscow,	1803
Charkow,	1804
Casan,	1803
Dorpat,	1632
Wilna,	1578
Helsingfors, (transferred from Abo).	1828

Poland, one.

Warsaw,	1816

Sweden and Norway, three.

Upsal,	1476
Lund,	1666
Christiania,	1811

Denmark, two.

Copenhagen,	1479
Kiel,	1665

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* These institutions, however, with few exceptions, are only schools, containing but one or two faculties.

Spain, eleven.

Valladolid,	1346
Huesca,	1354
Salamanca,	1404
Valencia,	1404
Saragossa,	1474
Alcala de Henares,	1490
Seville,	1504
Grenada,	1531
St. Jago di Compostella,	1531
Oviedo,	1580
Cervera,	1717

Portugal, one.

Coimbra,	1279

Cracow, one.

Cracow,	1400

Switzerland, five.

Basle,	1460
Lausanne	
Geneva	
Berne	
Zürich	

The four latter are called *academies*, but are considered as universities.

Italy.—*Naples*, three

Naples,	1224
Palermo,	1394
Catania,	1445

Sardinia, four.

Turin,	1405
Genoa,	1812
Cagliari,	1720
Sassari,	1765

States of the Church, four.

Rome (*Sapienza*),	1295
Bologna,	1168
Perugia,	1307
Urbino, . . . reëstablished	1826

Tuscany, three.

Sienna,	1330
Pisa,	1333
Florence,	1438

Parma, one.

Parma,	1432

Modena, one.

Modena	

Lucca, one.

Lucca	

Ionian Republic, one.

Corfu,	1824

Unterwalden, or **Underwalden**; one of the smaller Swiss cantons, in the centre of Switzerland, bounded north by Lucerne and Waldstädter lake, east by mountains which separate it from Uri, south by Berne, and west by Lucerne; square miles, 265, with 20,000 Catholic inhabitants; chief towns, Stantz and Sarnen. The government is democratic. The pasturage of cattle is the chief support of the inhabitants, and the exports consist of cattle, hides, cheese, butter and tallow. The surface is mountainous; and two of the summits, Tittles or Titlis (10,296 feet high) and Surenes, are covered with perpetual snow. The canton measures about eight leagues each way, and is divided into two valleys, Upper and Lower, by a forest called *Kernwald*, which crosses it from north to south. Sarnen is the principal place of the Upper Vale, and Stantz of the Lower and of the whole canton. The two valleys send alternately a deputy to the Swiss diet. Unterwalden is one of the cantons, which, in 1308, concluded the league which gave origin to the Swiss confederacy. It furnishes 382 men to the army of the confederacy. Its quota of money is 1907 Swiss francs. (See *Switzerland.*)

Upas Tree (*antiaris toxicaria*); a Javanese tree, celebrated for its poisonous qualities, which, however, have been very much exaggerated. It belongs to the *urticeæ*, the same natural family with the nettle, mulberry and bread-fruit. It attains large dimensions, and is often more than a hundred feet in height, with a trunk six feet in diameter at the base. The bark is smooth and whitish; the wood white; the leaves caducous, alternate, petiolate, oval, coriaceous, and often crisped. The juice flows abundantly on incision, is very viscous, bitter, yellowish if from the trunk, but white if taken from the younger branches. The emanations from this tree are dangerous to certain individuals, while, as in the poison sumach, others are not in the least affected by them. From the juice is prepared the frightful Upas poison. That obtained from this tree, however, acts in a different manner, and not so quickly as the *Upas-tieuté*. This last is the product of a species of *strychnos*, from the same country, a vine which ascends to the summits of the highest trees. The root is woody, about the size of a man's arm, and extends many feet horizontally: it is covered with a thin bark of a reddish-brown color and bitter taste: this yields, by ebullition, the gum-resin from which the poison is prepared.

Upper Canada. (See *Canada.*)

Upper House and **Lower House**;

sometimes used for the house of lords (q. v.) and of commons (q. v.), or, in other countries, for the house of peers and the house of deputies, or the first and second chamber, as in Baden. Its application to the English parliament is more common than to other legislative bodies.

Upsal (in Swedish, *Upsala*); a town of Sweden, in Upland, capital of a district of the same name; thirty-five miles north of Stockholm; lon. 17° 39′ E.; lat. 59° 52′ N.; population, 4800. It is situated on the small river Fyris, or Sala, which divides it into two parts, and opens a communication with lake Malar. It contains a large cathedral and two other churches: the cathedral is the largest in the kingdom, and contains the tombs of some Swedish kings, and many other monuments, among which is that of Linnæus. The archbishop of Upsal is the only one in Sweden. The private houses are mostly built of wood, the public buildings of stone or brick. The university of Upsal was founded in 1477. Gustavus Adolphus and Christina did much for it. It can boast of Linnæus, Wallerius, and a number of other distinguished professors. It has twenty-one professors, a library of 56,000 volumes and 1000 manuscripts, among which is the *Codex Argenteus*. (See *Argenteus*.) Here is also the manuscript deposited by Gustavus III, with directions that it should not be opened until fifty years after his death, a botanical garden, an astronomical observatory, an anatomical theatre, and cabinets of natural history and mineralogy, with a cabinet containing 11,000 coins. The number of students in 1829 was 1525; in 1815, 1200; 269 of theology, 150 of law, and 123 of medicine. This town was long the residence of the Swedish monarch, who bore the title of *king of Upsal* till the tenth century; and the kings of Sweden are still crowned here. Upsal is used by the Swedish geographers as the first meridian, from which they compute their longitude. King Frederic founded here, in 1728, the *societas literaria et scientiarum*.

Ural Mountains (from *ural*, girdle); a chain of mountains running along the frontier of Asia and Europe, nearly 1500 miles, from the Frozen ocean to the Caspian sea, containing the richest veins of metals in Russia. The northern part is called the Verchoturic, or Jugoric mountains. Verchoturi is the name of the height at the source of the Tura (58° N. lat.), where is situated the place of the same name, with 3000 inhabitants, and many iron works, the emporium of the Siberian trade. South of the great ridge of the Ural, the mountains of Guberlinki extend far into the steppes of the Kirguises. The highest summit of the Ural, the rock of Padwinski, is 6397 feet above the surface of the Caspian sea. Several rivers on the eastern and western declivities of the Ural promote the internal commerce of the government of Perm, which contains 120,000 square miles and 1,143,902 inhabitants. The crown has here nine mines and establishments for the manufacture of iron, fifty-one copper mines, a gold washing, and a mint. There are, besides, eighty-one iron and eighteen copper mines belonging to private individuals. The annual product amounts to 200,000 poods* of copper, 5,500,000 poods of wrought iron, and 8,500,000 poods of cast iron. The salt works of the crown yield annually 1,300,000 poods of salt; the private salt works, 6,136,000 poods. Above 120,000 men are employed in the mines. Tin is not found at all in the Ural; but the mountains afford some lead and silver. The platina obtained is considerable. The whole mineral product of the Ural, including the gold of the gold washings, may be estimated at from forty-five to fifty millions of roubles. Perm has also considerable manufactures. Of late the veins of gold have been worked much more extensively than before Alexander von Humboldt's visit to the Ural, in 1829, added to the knowledge of its stores.† The gold sands of the Ural were known as early as 1774. They extend over a tract containing 36,000 square wersts, and are found both in the mountains and on the banks of rivers. Fourteen thousand persons, including 4380 crown peasants, are occupied in the washings. The proprietors of private gold washings are obliged to pay ten per cent. to the government. Up to 1817, the gold obtained in the Ural did not amount to more than eighteen poods annually. Now it is above two hundred poods. In 1824, three million gold roubles were coined from two hundred poods of gold, of which more than a fourth part belonged to the emperor. The gold mines on the eastern declivity of this chain are said to be much more productive than those on the western. In April, 1825, several pieces of pure gold were found in the mines of Slatonsk, in the government of Orenburg, the largest of which weighed above sixteen pounds, the middling-sized ones from five to nine pounds. According to the investigations made there, the gold is supposed to have been produced by the agency of water, and not by that of fire. The ancient name of the Ural mountains was *Montes Hyperborœi*, or *Montes Riphœi*.

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* One pood is equal to 36 pounds 1 ounce 11 drachms; but among merchants, it is reckoned equal to 36 pounds.

† The following account is part of a letter from M. Humboldt to M. Arago (q. v.):—"We spent a month in visiting the gold mines of Borisovsk, the malachite mines of Goumeselevski, and of Tagilsk, and the washings of gold and platinum. We were astonished at the *pepitas* (water-worn masses) of gold, from two to three pounds, and even from eighteen to twenty pounds, found a few inches below the turf, where they had lain unknown for ages. The position and probable origin of these alluvia, mixed generally with fragments of greenstone, chlorite slate, and serpentine, was one of the principal objects of this journey. The gold annually procured from the washings amounts to 6000 *kil*. The discoveries beyond fifty-nine and sixty degrees of latitude become very important. We possess the teeth of fossil elephants enveloped in these alluvia of auriferous sand. Their formation, consequent on local irruptions and on levellings, is, perhaps, even posterior to the destruction of the large animals. The amber and the lignites, which we discovered on the eastern side of the Ural, are decidedly more ancient. With the auriferous sand are found grains of cinnabar, native copper, ceylanites, garnets, little white zircons, as brilliant as diamonds, anatase, alvite, &c. It is very remarkable, that in the middle and northern parts of the

Ural River (formerly called *Jaik*, and anciently *Rhymnus*) falls, after a course of 2000 wersts, or 1330 miles, through several mouths, into the Caspian sea, at Gurjew; lon. 52° 14′ E.; lat. 47° 15′ N. It rises twenty-four miles north of Verchouralsk, in lon. 58° 44′ E., lat. 54° N. It is shallow in some parts, but abounds in fish, particularly the sturgeon, of the spawn of which caviare (q. v.) is made. On the right bank live the Ural Cossacks; on the left the Kirguises. Among the former appeared, in 1772, the adventurer Pugatscheff. (q. v.) In consequence of their participation in his enterprise, they lost their privileges. Catharine restored them, but altered the name of *Jaik Cossacks*, which they had previously borne, to that of *Ural Cossacks*. The name of the river was also changed into *Ural*. These Cossacks furnish 20,000 men to the Russian army in case of war.

Urania; the muse of astronomy. She is generally represented with a crown of stars, in a garment spotted with stars, and holding in her left hand a celestial globe, or a lyre. Some give her also a telescope and a circle. (See *Muses*.)—*Urania* is likewise the name of the heavenly Venus, or of pure, intellectual love, in contradistinction to that which is merely sensual. The ancient Greek poets also call one of the Oceanides, or sea-nymphs, *Urania*.

Uranium; the name of one of the metals, from οὐρανος (the heavens). We shall first describe its ores, which are two in number; viz. *pitchblende* and *uranite*.—1. Pitchblende occurs massive, with a columnar or impalpable composition; fracture conchoidal or uneven; lustre imperfect metallic; color grayish-black, inclining sometimes to iron-black, also to greenish and brownish-black; streak black, a little shining; opaque; brittle; hardness below feldspar; specific gravity 6.46. According to Klaproth, it consists of

Protoxide of uranium,	86.50
Protoxide of iron,	2.50
Silex,	5.00
Sulphuret of lead,	6.00

Alone, before the blow-pipe, it is infusible, but, with borax, melts into a gray scoria. If reduced to powder, it is slowly soluble in nitric acid. It is found chiefly in veins, accompanied by various ores of silver and lead. Its chief localities are Johanngeorgenstadt and Schneeberg, in Saxony, and Joachimsthal, in Bohemia. In Cornwall, it has been found in the tin mines of Tincroft, near Redruth.—2. *Uranite*. This beautiful species is found in small, but very perfect crystals, of the form of the right square prism, which is usually so low as to appear tabular. The terminal and lateral edges are often replaced. Cleavage takes place parallel to the sides of the primary form, and with great ease parallel to the terminal planes; lustre pearly or adamantine; color emerald-green, leek-green or siskin-green; streak corresponding to the color; transparent to translucent on the edges; sectile; hardness a little above that of gypsum; specific gravity 3.115. It also occurs massive, having a granular composition. It consists of

Oxide of uranium,	60.00
Phosphoric acid,	16.00
Oxide of copper,	9.00
Silex,	0.50
Water,	14.50

Ural, the platinum is found only on the western European side. The rich gold washings of the Demidov family, at Nijnei-tagilsk, are on the Asiatic side, on the two acclivities of Bartiraya, where the alluvium of Vilkni alone has already produced more than 2800 pounds of gold. The platinum is found about a league to the east of the separation of waters (which must not be confounded with the axis of the high summits), on the European side, near the course of the Oulka, at Sukoi Visnin, and at Martian."

Alone, it becomes yellow before the blowpipe, and loses its transparency. Upon charcoal, it intumesces a little, and melts into a black globule. It occurs in veins of copper, silver, tin and iron. Beautiful varieties have been found in the Gunnis lake mine, in Cornwall. It also occurs in the Saxon and Bohemian mining districts. It is likewise met with at Bodenmais, in Bavaria, and at Limoges, in France.—*History of the Metal and its Compounds.* The easiest method of procuring the metal from the ore is the following:—The pitchblende is reduced to a fine powder, and digested in nitric acid till every thing soluble is taken up. The solution is then rendered as neutral as possible by evaporation, and a current of sulphureted hydrogen gas passed through it as long as any precipitate continues to fall. The liquid is filtered and heated, to drive off all traces of sulphureted hydrogen. It is now precipitated by caustic ammonia; and the precipitate, after being well washed, is digested, while still moist, in a pretty strong solution of carbonate of ammonia. A fine lemon-yellow liquid is obtained, which, being set aside for a few days, deposits an abundance of fine yellow crystals, in right rectangular prisms. These crystals, being exposed to a red heat, give out water, carbonate of ammonia, and oxygen gas, and leave a black oxide of uranium, which is easily reduced to the metallic state by passing a current of dry hydrogen gas over it, placed in a glass tube, and heated by a spirit lamp. The metal presents a liver-brown color, and remains in the state of a powder. No heat that we can raise is sufficient to melt it into a mass: of course its malleability and ductility are unknown. It has considerable lustre, and is soft enough to yield to the file. Its specific gravity is 8.10. It undergoes no change in the ordinary temperature of the atmosphere; but when heated to redness, it takes fire, swells, and is converted into green oxide. It is insoluble in sulphuric and muriatic acids, whether concentrated or diluted; but nitric acid dissolves it with facility. Uranium combines with two different proportions of oxygen, and forms two oxides. The *protoxide* is green, and the *peroxide*, or acid of uranium, is yellow. The former of these is obtained by exposing metallic uranium to a red heat. Its color, while in grains, is black; but when in powder, it is dark green. It is soluble in sulphuric and muriatic acids. The solutions are green. When dissolved in nitric acid, it is converted into the peroxide. Protoxide of uranium is tasteless, and, when anhydrous, it is not altered by exposure to the air. Peroxide of uranium, or uranic acid, is obtained by dissolving the protoxide in nitric acid, and precipitating by caustic ammonia. A beautiful yellow powder is obtained, which is a combination of peroxide of uranium and ammonia. Such is its tendency to combine with other bodies, that it cannot be obtained in a separate state. If we attempt to drive off the ammonia and water, with which it is united, it loses oxygen at the same time, and is converted into protoxide. The same change takes place when we heat pernitrate of uranium. Nothing is known respecting the combinations which this metal is capable of forming with chlorine, bromine and iodine, or with azote, carbon, boron, silicon and phosphorus. A sulphuret of uranium has been formed, which has a black color, and, when rubbed, a metallic lustre. Its capacity for forming alloys with the other metals remains, in consequence of the scarcity of the metal, uninvestigated. The oxides of uranium are used in painting upon porcelain, yielding a fine orange color in the enamelling fire, and a black one in that in which the porcelain itself is baked.

Uranus. (See *Herschel.*)

Uranus. According to the cosmo-theogony of the Greeks, Gæa (Earth) proceeded from chaos (the infinite void of space). The Earth produced Uranus (in remote antiquity, the personification of the sphere of light, the heavenly vault), and by him became the mother of the Titans (q. v.), the youngest of whom was called *Kronos* (Time). All the further productions of nature proceeded from the embraces of the Titans and Titanides. This was expressed, in the plastic language of the ancient poets, thus: Time (*Kronos*) put an end to the productive power of Uranus, and emasculated him with his sickle.—*Uranus* is also the name given by the continental astronomers to the planet which we commonly call *Herschel.*

Urbanists. (See *Franciscans.*)

Urea. (See *Urine.*)

Uri; a Swiss canton, bounded north by Schweitz, east by Glarus and Grisons, south by Tessin, and west by Berne and Unterwalden; square miles, 508; population, 14,000. The inhabitants are Germans by descent and language; of the Catholic religion; the government democratic. The canton is divided into two districts, Uri and Urseren: the chief town is Altorf. The country is extremely rugged, composed of barren and bleak mountains and deep valleys. Here are the elevated summits of St. Gothard (q. v.), which are covered with perpetual snow. The canton is traversed from north to south by the Reuss, and contains a number of lakes and mountain streams. Of the valleys, the two largest are those of the Reuss and of Urseren, each of which admits of a small extent of tillage; but pasturage is the principal source of subsistence; and cattle, cheese, wool, leather and timber the articles of export. Not far from Altorf is the village of Burgelen, the birth-place of William Tell. Uri concluded, in 1308, a league, for ten years, with Schweitz and Unterwalden, which, in 1315, was changed into the perpetual league. The whole canton consists of mountains and valleys, and is surrounded by mountains always covered with snow. On the south is mount St. Gothard, 9944 feet high. Little grain is raised; orchard fruits succeed well. The chief occupation of the people is raising cattle (Uri has 10,000 head of cattle) and making cheese. The road over the St. Gothard yields them much profit; formerly above 15,000 people passed over it annually, from Switzerland to Italy. The road over the Simplon is now generally preferred. Uri furnishes 602 men to the army of the confederacy. Its quota of money is 3012 Swiss francs.

Uric Acid. (See *Urine.*)

Urim and Thummim (*light and perfection*); a kind of ornament belonging to the habit of the Jewish high-priest, by means of which he gave oracular answers to the people. What they were, and the mode in which the divine will was communicated to the high-priest by means of them, is disputed among the critics.

Urine is an excrementitious fluid, designed for ejecting from the system substances which, by their accumulation within the body, would prove fatal to health and life. It is secreted by the kidneys, whose sole office it appears to be to separate from the blood the superfluous matters that are not required for nutrition, or which have already formed part of the body, and been removed by absorption. The substances, which, in particular, pass off by this way, are nitrogen and various saline and earthy compounds. In its natural state, it is transparent, of a yellow color, a peculiar smell, and saline taste. Its quantity, and, in some measure, its quality, depend on the seasons and the peculiar constitution of the individual, and are likewise modified by disease. It is observed, that perspiration carries off more or less of the fluid which would else have passed off by urine; so that the profusion of the former is attended with the diminution of the latter. The specific gravity of the most concentrated urine is 1.030. It gives a red tint to litmus paper—a circumstance which indicates the presence of a free acid, or of a supersalt. Though at first quite transparent, an insoluble matter is deposited on standing; so that urine voided at night is found to have a light cloud floating in it by the following morning. This substance consists in part of mucus, and partly of superurate of ammonia, which is much more soluble in warm than in cold water. Urine is prone to spontaneous decomposition. When kept for two or three days, it acquires a strong smell; and as the putrefaction proceeds, the disagreeable odor increases, until, at length, it becomes exceedingly offensive. As soon as these changes commence, the urine ceases to have an acid reaction, and the earthy phosphates are deposited. In a short time, a free alkali makes its appearance, and a large quantity of carbonate of ammonia is gradually generated. Similar changes may be produced in recent urine, by continued boiling. In both cases, the phenomena are owing to the decomposition of *urea*. This principle is procured by evaporating fresh urine to the consistence of a sirup, and then gradually adding to it pure concentrated nitric acid, till the whole becomes a dark-colored crystallized mass, which is to be repeatedly washed with ice-cold water, and then dried by pressure between folds of bibulous paper. To the nitrate of urea thus procured, a pretty strong solution of carbonate of potash or soda is added, until the acid is neutralized; and the solution is afterwards concentrated by evaporation, and set aside, in order that the nitre may separate in crystals. The residual liquor, on evaporation and resolution in alcohol, deposits transparent and colorless crystals of urea. It leaves a sensation of coldness on the tongue, like nitre, and its smell is faint and peculiar, but not urinous; specific gravity 1.35: it fuses at 248° Fahr., and, at a rather higher temperature, is resolved into carbonate of ammonia and cyanic acid: water dissolves, at 60°, more than its own weight of urea, and boiling water takes up an unlimited quantity. The numerous researches made concerning urine have given the following as its component parts: 1. water; 2. urea; 3. phosphoric acid; 4, 5, 6, 7. phosphates of lime, magnesia, soda and ammonia;

8, 9, 10, 11. lithic, rosacic, benzoic and carbonic acid; 12. carbonate of lime; 13, 14. muriates of soda and ammonia; 15. gelatin; 16. albumen; 17. resin; 18. sulphur. According to Berzelius, healthy urine is composed of water 933, urea 30.10, sulphate of potash 3.71, sulphate of soda 3.16, phosphate of soda 2.94, muriate of soda 4.45, phosphate of ammonia 1.65, muriate of ammonia 1.50, free acetic acid, with lactate of ammonia, animal matter soluble in alcohol, and urea, 17.14, earthy phosphates with a trace of fluate of lime 1.0, uric acid 1, mucus 0.32, silex 0.3, in 1000.0. The *uric acid* is a constant ingredient in urine: when pure, it has the following properties: it is sometimes in the state of a white impalpable powder, sometimes in small four-sided prisms, having considerable lustre. It is very tasteless, very white, light, and insoluble both in water and alcohol. In concentrated sulphuric acid, it speedily assumes the form of a jelly, and with the aid of a little heat, a complete solution is obtained. In nitric acid, even though dilute, it dissolves with effervescence; and when the solution is evaporated to dryness, it assumes a fine pink color, which becomes much deeper when water is added, so as to have a near resemblance to carmine. In this state, it stains wood, the skin, &c., of a beautiful red color. The watery solution of this matter loses its red color in a few hours, and it cannot afterwards be restored. Uric acid combines with the different bases, and forms a genus of salts called *urates*. The only ones of importance are the urates of ammonia, potash and soda. Urate of ammonia is soluble, to a considerable extent, in boiling, but more sparingly in cold water. The urates of soda and potash, if neutral, are of very feeble solubility; but an excess of either alkali takes up a large quantity of the acid. When uric acid is heated in a retort, carbonate and hydrocyanate of ammonia are generated, and a volatile acid sublimes, called *pyro-uric acid*, which is believed to be identical with cyanic acid.—Such is a general view of the composition of human urine in its healthy state. But this fluid is subject to a great variety of morbid conditions, which arise from the deficiency or excess of certain principles which it ought to contain, or from the presence of others wholly foreign to its composition. Of those substances which, though naturally wanting, are sometimes contained in the urine, the most remarkable is sugar, which is secreted by the kidneys, in diabetes. Diabetic urine has a sweet taste, and yields a sirup by evaporation, is almost always of a pale straw-color, and, in general, has a greater specific gravity than ordinary urine. The sugar, when properly purified, appears identical, both in properties and composition, with vegetable sugar, approaching nearer to the sugar of grapes than that of the sugar-cane. The acidifying process which is constantly going forward in the kidneys, as evinced by the formation of sulphuric, phosphoric and uric acids, sometimes proceeds to a morbid extent, in consequence of which, two acids, the oxalic and nitric, are generated; neither of which exists in healthy urine. The former, by uniting with lime, gives rise to one of the worst kinds of urinary concretions; and the latter appears to lead to the formation of purpurate of ammonia, by reacting on uric acid. In severe cases of jaundice, the bile passes from the blood into the kidneys, and communicates a yellow color to the urine. Though albumen is contained in very minute quantity in healthy urine, in some diseases it is present in large proportion. It is characteristic of certain kinds of dropsy. In certain states of the system, urea is generated in an unusually small proportion. This occurs especially in diabetes mellitus, and in acute and chronic inflammations of the liver. An abundant secretion of uric acid is by no means uncommon. In some instances, this acid makes its appearance in a free state; but, happily, it generally occurs in combination with an alkali, especially with soda or ammonia. The undue secretion of these salts, if temporary, occasions scarcely any inconvenience, and arises from such slight causes, that it frequently takes place without being noticed. This affection is generally produced by errors in diet, whether as to quantity or quality, and by all causes which interrupt the digestive process in any of its stages, or render it imperfect. Doctor Prout specifies unfermented, heavy bread, and hard-boiled puddings or dumplings, as, in particular, disposing to the formation of urates. These sediments have commonly a yellowish tint, which is communicated by the coloring matter of the urine; or, when they are deposited in fevers, forming the lateritous sediment, they are red, in consequence of the coloring matter of the urine being then more abundant. As long as uric acid remains in combination with a base, it never yields a crystalline deposit; but when this acid is in excess and in a free state, its very sparing solubility causes it to separate in minute crystals, even within the bladder, giving rise to two of the most distressing complaints to which mankind are subject—to *gravel* when the crystals are detached from one another, and, when agglutinated by animal matter into concrete masses, to the *stone*. These diseases may arise either from uric acid being directly secreted by the kidneys, or from the formation of some other acid, by which the urate of ammonia is decomposed. The tendency of urine to contain free acid occurs most frequently in dyspeptic persons of a gouty habit, and is familiarly known by the name of the uric or lithic acid diathesis. In these individuals, the disposition to undue acidity of the urine is superadded to that state of the system which leads to an unusual supply of the urates. A deficiency of this acid in urine, however, is no less injurious than its excess. As phosphate of lime, in its neutral state, is insoluble in water, this salt cannot be dissolved in urine except by being in the form of a superphosphate. Hence it happens that healthy urine yields a precipitate, when it is neutralized by an alkali; and if, by the indiscriminate employment of alkaline medicines, or from any other cause, the urine, while yet in the bladder, is rendered neutral, the earthy phosphates are necessarily deposited, and an opportunity afforded for the formation of a stone.

Urn; a species of vase of a roundish form, but largest in the middle, destined, among the ancients, to receive and enclose the ashes of the dead; which destination its name, in fact, sufficiently indicates, the Latin word *urna*, or *urnula*, being most probably a derivative of the verb *urere* (to burn). The Romans often made use of Grecian vases for this purpose, as is evident from those found in the tombs in the vicinity of Naples, which contain both bones and ashes. (See *Vase*.) Urns are commonly met with in almost all collections of antiquities; and Montfaucon, in particular, has drawn and engraved a great number of them. The substances employed in the construction of these vessels are numerous. Amongst them are gold, bronze, glass, terra-cotta, marble and porphyry. They were made of all shapes and sizes: some had smooth surfaces; others were engraved in *basso rilievo*. Many have been discovered bearing inscriptions; others with the name only of the party to whose remains they were devoted. Several have no other character than the two letters D. M., *Diis Manibus* (To the Shadowy Deities). Others, again, present nothing more than the name of the artist by whom they were wrought, written either on the handle or at the bottom. Little vessels have occasionally been found in ancient tombs, denominated *lachrymal urns*. (See *Lachrymatory*.)

Ursa Major and **Ursa Minor**; the Great and Little Bear. (See *Constellations*.)

Ursula, St.; a virgin martyr; according to the legend, a daughter of a prince in Britain, put to death at Cologne, some say in 384, others in 453, together with 11,000 virgins who accompanied her. According to another reading, the number of her companions was only eleven. The number may have been increased to 11,000 by a mistake in taking the name of one of her attendants (called, according to the legend, and according to a missal, which belonged to the Sorbonne, *Undecimilla*) for a number. The Roman martyrology mentions the saint and her virgin companions, without stating their number. St. Ursula was the patroness of the Sorbonne. (See *Ursulines*, and *Cologne*.)

Ursulines, or **Nuns of St. Ursula** (q. v.); a sisterhood founded by St. Angela, at Brescia, in 1537, at first without being bound to the rules of the monastic life, but devoting themselves merely to the practice of Christian charity and the education of children. Paul III confirmed them in 1544, under the name of *society of St. Ursula*. In 1572, Gregory XIII made the society a religious order, subject to the rule of St. Augustine, at the solicitation of St. Charles Borromeo. They add to three religious vows a fourth, to occupy themselves gratuitously in the education of children of their own sex. The order is under the superintendence of the bishops. In the eighteenth century, it had 350 convents. Many governments which abolished convents in general, protected the Ursulines on account of their useful labors, particularly in the practice of Christian charity towards the sick. The *Dictionnaire de Théologie*, published in 1817, says that 300 convents of these sisters existed at that time in France. Their dress is black, with a leather belt, and a rope for the purpose of self scourging. Their congregations, however, did not universally accept the monastic rule; and in France and Italy, there were societies, the members of which only took the vow of chastity, and gave instruction like their sisters. Their dress was that commonly worn about 200 years ago by widows.

There are some of these sisterhoods in the U. States.

Urus. (See *Ox.*)

Usage, in law. (See *Common Law*, and *Prescription.*)

Usance, in bills of exchange. (See *Bills of Exchange*, vol. ii, page 104.)

Usbecks; a Turkish tribe, now ruling in Tartary, and, for three centuries, the terror of part of Central Asia. They occupy the modern Bucharia (or Usbeckkistan) and Turcomania. *Us* is the Turkish word for *self*, and *beck* signifies *lord*; hence *Usbeck* signifies master of one's self. Shaibeck, or Shaibani Khan, became, in 1498, the founder of the power of the Usbecks on the Oxus (Jihon or Amu). He deprived the descendants of Timour of the last shadow of their power. After a long series of wars with the Persians, Bucharians, Turcomans and Chorasmians, after bloody civil contentions and changes of dynasties, Mahmed Rahim Khan at last obtained absolute power, in 1802 (see *Turkestan*), over Khiwa and the neighboring countries. He organized the present empire, established a divan, coined gold and silver, &c. With all the other qualities of a despot, he unites cunning and uncommon understanding. The Usbecks are more honest than the other tribes under the khan. Justice is one of their chief traits. They hate lying and avarice and every thing groveling. War and pillage they consider the only honorable employments. They still continue their struggles with the Persians and Turcomans, invade the territories of their neighbors, and carry away slaves. There are said to be at present about 3000 Russian and 30,000 Persian slaves among them. The Usbecks now generally live in towns, possess the highest offices, and own many small castles, which they lease to the Turcomans and Sartes. They are divided into four chief tribes. The number of their warriors may amount to 30,000. The khan has, in the whole, 3,000,000 of subjects. Khiwa, the residence of Mahmed Rahim, is inferior in size to Newurgenz, an ancient city, which flourished during the times of the Arabians, but is now depopulated. The arts, sciences, music and poetry were cultivated there. Until the fourteenth century, it was the point of meeting of all the caravans on the Jihon. Perhaps the influence of the Russians may introduce some civilization among these rude tribes.

Usedom; a Prussian island in the Baltic, separated from the coast of Pomerania partly by the river Peene, and partly by the Frische Haff, about thirty miles in length, of a very irregular form, and in no part above three miles from the sea. It is intersected by several ranges of downs and sand hills, and has large woods, but not much land fit for agriculture. The inhabitants are chiefly employed in navigation and fishing. Population, from 11,000 to 12,000; square miles, 150; chief towns, Swinemunde (q. v.) and Usedom; lon. 13° 11′ to 13° 58′ E.; lat. 54° 15′ to 54° 45′ N.

Usher, James; archbishop of Armagh, in Ireland, born at Dublin, in 1580. After the death of his father, who was one of the six clerks in chancery, he gave up the paternal estate to his younger brother, and devoted himself to the church; entered Trinity college, and studied the writings of the fathers and the schoolmen, whence he compiled a systematic body of extracts; and, in 1601, took holy orders, and was appointed afternoon preacher at Christ-church, Dublin. Soon after, he visited England, to purchase books for Trinity college library, and became acquainted with many learned men. His talents, and the favor of his sovereign, James I, successively procured him the professorship of divinity at Trinity college; in 1607, the office of chancellor of St. Patrick's; the bishopric of Meath, in 1620; the post of privy counsellor, in 1623; and, the following year, the primacy of Ireland. In this station he displayed the same zeal against the Catholics for which he had been distinguished in the early part of his career, and wrote several controversial works on the theological points of interest at the time. His notions of church government verging towards Presbyterianism, his enemies took advantage of this to destroy his credit with James I; but his undeviating support of the royal supremacy saved him from suffering by their machinations, and he enjoyed, to the last, the esteem of king James. He endeavored to prevent Charles I from sacrificing lord Strafford, whom Usher attended in prison and at his execution. He adhered to the king's interest during the civil war, and witnessed the execution of his master. The scene had such an effect on him, that he fainted; and he commemorated the event by an anniversary celebration of funeral rites. After that event, he experienced civility and flattering promises from Cromwell; but the latter were not fulfilled. He died in 1656, and the protector ordered that he should be interred in Westminster abbey. Archbishop Usher carried on an extensive correspondence with the learned in various parts of Europe, and collected, at considerable expense, valuable books and manuscripts. Among the latter were the Samaritan Pentateuch and a Syriac version of the Old Testament. Such was the general esteem excited by his character and literary reputation, that, on his quitting Ireland, in consequence of the rebellion, he was offered a professorship at Leyden; and cardinal Richelieu invited him to settle in France, promising him his patronage, with perfect freedom as to religion. But he thought proper to decline both these proposals. His principal works are the Annals of the Old and New Testament (folio), a treatise of the highest authority in chronology and sacred history; *Britannicarum Ecclesiarum Antiquitates* (folio); and a Body of Divinity (folio), compiled surreptitiously from his sermons and notes.—See Aikin's *Lives of Selden and Usher* (1812).

Usher (*huissier*); an officer who has the care of the door of a court, hall, chamber, or the like.—The *gentleman usher of the black rod* is the chief gentleman usher to the king of England. During the sessions of parliament, he attends the house of peers. His badge is a black rod, with a lion, in gold, at the top. This rod has the authority of a mace; and to the custody of this officer all peers subjected to question for any crime are first committed.

Usquebaugh is a strong compound liquor, chiefly taken by way of dram, and made in its highest perfection at Drogheda, in Ireland. Brandy, raisins, cinnamon, cloves, cardamoms, saffron, orange rind, brown sugar candy, are the ingredients of it.

Usufruct (*usus fructus*); in the civil law, the temporary use or enjoyment of any lands or tenements, or the right of receiving the fruits and profits of an inheritance, or other thing, without a power of alienating the thing or changing the property thereof. The relations between the proprietor and the usufructuary are settled by the agreement made between them.

Usurper; in politics, one who unlawfully puts himself at the head of a government. (See *Legitimacy*, and *De Facto*; also *Sovereignty*.)

Usury, in a very general sense, means a compensation or reward for money lent. In this sense, it is equivalent to *interest*. But in the common business of life, it rarely has this signification, but is chiefly used in an odious sense, to express an exorbitant or illegal compensation for money lent, in contradistinction to the common compensation allowed by law, which is called *interest*. Thus a man is commonly called a *usurer*, who lets money for more than legal interest, and who is therefore deemed a hard, oppressive and avaricious creditor. It is singular to what a great extent the prejudice against the receipt of interest upon money lent has prevailed in all ages. That a man should receive a compensation for a thing which he lends to another for a use which is beneficial to the latter, and inconvenient to himself, seems to stand upon the first principles of justice. If A lets his horse to B for a journey for B's pleasure or profit, no one doubts the propriety of A's asking and receiving a compensation for the hire of the horse. Why, then, should not A be equally entitled to a compensation, if he lends money to B for the pleasure or profit of the latter? If the compensation asked be a reasonable recompense only, for the inconvenience to which A is put, or for the hazard which he runs of not receiving back the thing lent, there is no difference in the principle, whether the loan be of the horse or of the money. If it be exorbitant or illegal, the impropriety and injustice equally apply to each case. And yet it has been rare, either in the policy of nations or the opinions of moralists, that the transactions have been viewed in an equally favorable light. One ground of the common prejudice probably has been, that money, being the common medium of trade and commerce, is more generally in demand, and more universally useful to all persons, than any other commodity; and therefore the whole community are eager to borrow upon as cheap terms as possible, and the lenders are as naturally desirous to lend upon as high terms as possible; thus begetting a mutual jealousy, and a strong tendency to hard bargains. In times when money is scarce, the necessity, as well as the difficulty, of borrowing, is greatly increased, and an inflamed spirit of discontent is generated against those who possess the means of relief, and will not afford it, but upon the terms of an exorbitant compensation. They thus become odious, first as individuals, and next, when they become numerous, as a class. In this way, money-lenders are deemed to have a peculiar interest hostile to that of the public at large; and even if the laws do not prohibit the charge of high interest, they are stigmatized as extortioners and usurers. Besides, the poor, the extrava gant and the dissolute generally live beyond their means, and therefore have the strongest desire, as well as the strongest necessity, for borrowing. In proportion as their wants rise, they are more ready to contract for high interest; and as they are unable to pay when the proper time for payment arrives, they are compelled to submit to further exactions; and the creditors, as they perceive an increasing hazard of losing the principal, are disposed to indemnify themselves against the risk by additional premiums. From these combined operations, always going on, in such cases, with accelerated force, there is almost a certainty of ultimate ruin to such borrowers. The creditors are thus compelled to more vigilance, and to more effort to obtain or secure payment, until, at last, the borrowers seem to be the victims of misfortunes which they are unable to resist, and the creditors to be the instruments of harsh and vindictive oppression. Thus public sympathy becomes enlisted on the side of the sufferers, without adverting to the rights or the indulgences of the creditors, simply because the latter can bear the loss without as much suffering. But a more extensive ground of prejudice has been derived from religious sources. Those who are enemies to the allowance of interest in general, often make no distinction between that and usury, and hold each to be equally reprehensible. Christians, in an especial manner, have drawn arguments from the prohibition of usury by the law of Moses, among the Jews; and the school divines, partly on this account, and partly on the authority of Aristotle, who has fancifully said that money is naturally barren, and to make it breed money is preposterous, have not hesitated to pronounce it contrary to the divine law, both natural and revealed. The canon law, too, has proscribed the taking of any, even the least, interest for the loan of money, as a mortal sin. It is not surprising, under such circumstances, that men, in the dark ages, should have looked with horror upon the taking of interest, and that the military and feudal lords of those days, who were always needy, and always borrowing, full of the pride of birth and rank, and full of disdain for the humbler avocations of life, and especially of those connected with the accumulation of money, should have looked with contempt upon the usurer, and have augmented the popular delusion. But that, in enlightened times, the religious scruples to which we have alluded should still have prevailed, is one more illustration of the difficulty of correcting error when it has once fastened itself on the community. Nothing can be clearer, than that the Mosaic precept was merely a political, and not a moral precept. It did not prohibit the Jews from all taking of usury. It only prohibited them from taking it from their own brethren, the Jews. But the Mosaic law, in express words, permitted them to take it of a stranger. The Jews have, accordingly, been great money-lenders upon interest in all ages; and this has, probably, in Christian countries, still more augmented the prejudice against this venerable, but unfortunate people. Indeed, so strongly is this prejudice fixed, that a man of a sordid and avaricious character is, even now, proverbially called a *Jew*. There is, however, not the slightest foundation, either in natural or revealed religion, for any prohibition against the taking of interest upon money, any more than against the taking of a profit for the use of any other thing loaned. But the policy of most nations has not suffered the right or rate of interest to rest upon the mere moral law, or the doctrines of religion. In almost all nations, in modern times, the legislature have regulated the subject, and prohibited, under severe penalties, all contracts and bargains, by which any excess of interest, beyond the rate prescribed by the law, is secured. In many countries, they have declared all such contracts utterly void, so that even the principal loan cannot be recovered; thus making the supposed want of conscience, on one side, a full justification of the grossest want of conscience on the other. In some countries, they have allowed the interest, if paid, to be recovered back. In other countries, they have refused this, and adopted an intermediate course, allowing a recovery of the principal, sometimes with a small interest, and sometimes with no interest. Among statesmen and political economists, it has been for a long time a vexed question, how far the regulation of interest upon money is founded in sound policy, or public convenience. That it should be regulated by the legislature to the extent of declaring, by a general rule, what interest shall be allowed when the parties have been silent, and what shall be allowed where there has been a wilful delay of payment beyond the stipulated period, would seem to be a proposition susceptible of little question or debate. It is far better to have some certain rule, in such cases, to furnish a universal guide, than to leave the amount to be ascertained by a judicial decision in every case of difference between the parties. And where the parties have been silent, if such a rule exists, it may fairly be presumed to be acquiesced in or adopted by them. The question, then, is not, whether the law ought, in cases unprovided for by the parties, to adopt some uniform measure of interest, but whether the parties should be prohibited from stipulating for any rate of interest which they may choose. In former ages, it was quite a common practice for legislatures to regulate the rate of buying and selling many commodities, so as to restrain the ratio of profits within certain limits. Such regulations would now be generally deemed unphilosophical and impolitic, as well as oppressive. All that the law would now attempt to accomplish, would be to prevent imposition, fraud and circumvention in such contracts. Why should not the same principles apply to bargains about money? Why should a man, dealing fairly and openly, be prevented by the laws from making as high a profit upon the sale or loan of money as upon the sale or loan of merchandise? The general grounds upon which legislation upon the subject of the interest of money has been justified, as contradistinguished from other profitable contracts, are, the prevention of excessive interest; the prevention of prodigality; the protection of the poor and needy against extortion; the suppression of rash enterprise, and the security of the weak and credulous against imposition. Now, it will be found, upon a careful examination, that some of these grounds are quite unsatisfactory and delusive; and some of them are equally applicable to all other contracts and bargains as well as to loans of money. So far as the object of laws is to prevent oppression and imposition, and undue advantage of the strong over the weak and credulous, the principle should apply to all contracts, not by regulating the terms of every contract *a priori*, and settling what, under all the circumstances, should be just and reasonable, but by providing, by general principles of law, that unconscionable and oppressive contracts, where undue advantage is taken of the weakness, or credulity, or necessity, of the other party, shall be either wholly set aside, or reduced to moderation, upon a full trial of each particular cause, and an examination of all the facts, so as to make the decision just in itself, *ex æquo et bono*. There is nothing in the nature of contracts for loans of money which, in this respect, makes it either necessary or proper to distinguish them from others. Nor is it easy to see how prodigality would be encouraged by the facility of borrowing any more than of buying. Interest will always bear a steady proportion to the means of repayment, and the punctuality of the performance of the contract. If persons are prodigal and extravagant, they will not be less inclined to borrow because the laws have protected them against paying an undue interest; and if they do borrow under such circumstances, they must either give an extravagant interest, in order to indemnify the lender against the additional risk from its illegality, or else they will borrow upon the usual terms; and in neither case does the prohibition answer its purpose. The interest of money must ordinarily be regulated in practice by the value of the use to the borrower as well as the lender, by the general demand for it, and by the hazard of repayment. If the demand be small, and the security be good, the interest will be low. If the demand be great, the interest will be high, although the security be good. And if the demand be great, and the security doubtful, it is obvious that the price will be proportionally enhanced, since it includes the risk of loss as well as the value of the use. Now, it is certain that these three ingredients admit of very various combinations, and that there are perpetual changes going on in relation to each. Nothing is more uncertain or variable than the demand for money, and the facility of obtaining it. It depends upon a thousand circumstances, political, commercial, and even local. No man can foresee them; and no legislation can suitably provide for them. The very elements upon which to found a rule admit of no arrangement and no certainty. Is it not, therefore, unwise, as well as unjust, to establish a general rule to govern all cases, when the rule itself cannot work the same way any two days in succession throughout the year? On the other hand, there are positive mischiefs attendant upon all absolute regulations of this subject. In the first place, no laws can practically reduce the rate of intetest below the lowest ordinary market rate at the time when the money is wanted. It will be borrowed, at all events, if there is a necessity; and in proportion as the demand grows more urgent, there will be a correspondent disposition to evade and break down the restriction. Thus a tendency is created to a habitual disobedience to the laws—a tendency which, in every view, moral as well as political, is deeply to be deprecated. In the next place, it operates greatly to the discouragement of trade and commerce. Nothing more favors the interests of commerce than a general liberty to buy and sell without restraint or obstruction. If the party can always obtain money, while he possesses good credit, without any restraint as to the interest he shall give for it, from the rise or fall of markets, he will naturally be induced to extend his business, and may extend it with comparative security and advantage. But, if he is obliged to calculate all possible chances of relieving his necessities beforehand, with the knowledge that, if money rises in the market, he must borrow upon disadvantageous terms, he will not embark at all in enterprises which go beyond his own present means; or he will take the risk, and, if the exigency arises, he must pay proportionally higher, because the law gives no validity to the contract. He must pay the lender for trusting to his honor and honesty, and not to the authority of the laws. In short, the moment it is admitted (what can hardly be disputed) that commerce cannot well subsist, to a great degree, in any country, without mutual and extensive credits, it is obvious that every measure that facilitates and gives security to such credits must be beneficial. Another evil attendant upon restrictive laws is, that, in any scarcity or extraordinary emergency, they unavoidably enhance the market price of money. They make the pressure heavier, and compel the parties to heavier sacrifices. Many men will not, in such times, lend their money at all upon common interest; and yet they have great scruples about letting it upon any contract for usury, lest they should lose both principal and interest. Others, if they do lend without regard to the laws, demand a higher and perhaps extravagant compensation for the hazard which they run. And conscientious borrowers, rather than incur the imputation of being violators of the laws, make other sacrifices of their property, which sometimes are ruinous, and generally are deeply injurious to their estates. If, under such circumstances, they were free to make their own bargains, they could borrow at lower rates, and could give legal security. In short, the prohibitory system, in many cases, aggravates the very evils which it is intended to mitigate. It makes the prodigal more extravagant, the rash more undistinguishing, the poor more servile and dependent, the rich more irresolute or avaricious, the weak a more easy prey to the crafty, the busy and enterprising more timid or more speculative, and thus introduces into social life many perturbations which cannot be calculated, and many immoral practices which silently impair, or openly sap, the foundations of virtue.

Ut, Re, Mi. (See page 493.)

Utawas, or Outawas; a river which forms the boundary between Upper and Lower Canada, and flows south-east into the St. Lawrence, just above Montreal. It is sometimes called *Montreal* river. Its course is considerably interrupted by falls and rapids; yet the fur traders contrive to pass these without damage in their loaded canoes. Its navigation will doubtless be greatly improved by canals.

Uterine (from *uterus*, womb) is used to denote the relation of children who have the same mother, but different fathers.

Uterus (the *womb*); the organ in which the embryo is received from the ovary, to which it becomes adherent, so as to receive the materials of its growth, and in which it is retained for a longer or shorter time in various species until its expulsion in the process of parturition. A proper uterus belongs only to the mammalia; oviparous generation under various modifications is found in the other classes; and the female organ is therefore reduced to a mere canal (oviduct) for the transmission of the ova. In the human female, the uterus is a spongy receptacle, resembling a compressed pear, situated in the cavity of the pelvis, above the vagina, and between the urinary bladder and rectum. Its form resembles that of an oblong pear flattened, with the depressed sides placed towards the ossa pubis and sacrum; but, in the impregnated state, it becomes more oval, according to the degree of its distention. For the convenience of description, and for some practical purposes, the uterus is distinguished into three parts—the upper part, called the *fundus*; the lower, the *cervix*; the space between them, the *body*. The uterus is about three inches in length, about two in breadth at the fundus, and one at the cervix. Its thickness is different at the fundus and cervix, being at the former usually rather less than half an inch, and at the latter somewhat more; and this thickness is preserved throughout pregnancy, chiefly by the enlargement of the veins and lymphatics, there being a smaller change in the size of the arteries. But there is so great a variety in size and dimensions of the uterus in different women, independent of the states of virginity, marriage or pregnancy, as to prevent any very accurate mensuration. The internal surface of the uterus is corrugated in a beautiful manner, but the rugæ, or wrinkles, which are longitudinal, lessen as they advance into the uterus, the fundus of which is smooth. In the intervals between the rugæ are small orifices, like those in the vagina, which discharge a mucus, serving, besides other purposes, that of closing the os uteri very curiously and perfectly during pregnancy. The substance of the uterus, which is very firm, is composed of arteries, veins, lymphatics, nerves, and muscular fibres, curiously interwoven and connected together by cellular membrane. The use of the womb is for menstruation, conception, nutrition of the fœtus, and parturition. It is liable to many diseases, the principal of which are retroversion and falling down, hydatids, dropsy of the uterus, moles, polypes, ulceration, cancer, &c. (See *Labor.*)

Utica; in antiquity, a celebrated city established very early by the Phœnicians, on the northern coast of Africa. It was independent of Carthage, yet in alliance with that city. It was celebrated for the suicide of the younger Cato (q. v.), who is called, on that account, *Uticensis*. After the destruction of Carthage, it became the capital of the province. According to Strabo, it was situated on the same gulf with Carthage. Augustus granted the title of Roman citizens to its inhabitants. On its site are found old walls, a very large aqueduct, cisterns, and vestiges of other edifices, which announce a large and magnificent city. The name of the modern town is Booshatter. This, by the accumulation of mud brought down by the river Bagada, is now about seven miles from the sea.

Utica. The city of Utica, in New York, stands on the south side of the river Mohawk, in lat. 43° 6′ N., and lon. 74° 13′ W. It is situated in the north-eastern part of the charming valley which is made by the river Mohawk, the Ouskany and the Sadaghqueda or Saquoit (*saw-qua*) creeks. These creeks furnish canal basins and water for many useful branches of manufactures and machinery. The Erie canal passes through the city, running parallel to the river, at the distance of sixty-five rods, and is crossed by twelve bridges. The canal level is 425 feet above the tide water at Albany. The central street of the city is distant from Albany, by the post-road, 196 miles; by the canal, 110 miles: from Buffalo, on lake Erie, by the post-road, 202 miles; by the canal, 253 miles: from Oswego, the southern port of lake Ontario, with which it communicates by the Erie and Oswego canals, 84 miles. The city is nearly the geographical centre of the state. In 1794, the place contained nineteen families: in 1830, the return from the census was 8500. Its present population is estimated at 10,000. The city charter was granted by the legislature of the state February, 1832. The charter is remarkable for being the first ever granted in the state in which the licensing of shops for retailing ardent spirit is expressly prohibited. The institutions chartered by the legislature are fifteen, namely, two banks, with an aggregate capital of $850,000 actually paid in; a branch of the United States bank, with no definite amount of capital assigned; two insurance companies (capital $750,000), aqueduct company (capital $25,000), horticultural society (capital $10,000), Oneida medical society, Utica academy, city library (with 3000 volumes), Utica lyceum, public school, orphan asylum, Oneida institute of science and industry, ancient Briton's society, mechanic's association. There are also thirty-three charitable and benevolent societies or associations not chartered, besides four temperance societies; religious congregations, organized under the statute, fourteen, having thirteen churches and houses of worship. There are thirty-six private schools, nine weekly newspapers, twenty-seven physicians and surgeons, thirty-three lawyers, and twenty-three clergymen, a post-office, 116 regular stage-coaches; and 28 packet-boats depart every week. Value of real estate, taken from the assessors' books, $1,619,050; personal, $1,053,525; total, $2,672,575: value of the most important articles of manufacture, exclusive of cotton and woollen goods, yearly, $585,000; sales of merchandise from New York and other places abroad, $1,100,000; sales of cotton and woollen goods manufactured in the immediate vicinity, $500,000; amount of salt, glass and lumber not estimated. The canal commerce, belonging to the city, as appears from the collector's books for 1831, yielded the following sums: tolls received at Utica, $41,014:44; tolls paid on clearances received at and passing Utica, $897,352:31; total, $938,366:75. The manufacturing district, or the beautiful valley of the Sadaghqueda above mentioned, includes a territory of ten miles square, having Utica in the north-east corner, and the river Mohawk for its northerly line. Here, on the stream from which the valley takes its name, are eleven cotton factories, with a capital stock of $686,000. In eight of these are manufactured cotton cloths of different qualities, and in three, cotton yarn. They have in operation 29,608 spindles, 745 power-looms, and produce annually 5,110,700 yards of cloth, valued at upwards of $500,000. They employ directly more than 1100 persons, and give support to as many more, not immediately engaged in the establishments. The quantity of cotton annually wrought is 1,515,290 pounds, costing about $160,000. In addition to the common cloths, are made 534,560 yards of 6-4 bed-ticking, woven in families in the neighborhood of the factories. In the yarn factories, 100,000 pounds of yarn are annually spun, which is not made into cloth. Connected with these factories are twelve saw-mills, eight grain-mills, one furnace, one trip-hammer, two clothiers' shops, two oil-mills, two paper-mills, two machine shops, one calico-printing shop, one woollen factory, one bleaching establishment, and two plaster-mills, the investments and products of which have not been estimated. In the woollen factory on the Oriskany, the amount of capital invested is $160,000; number of persons directly employed, 147; number in families, exclusive of the above, maintained by wages from the factory, 360; aggregate amount of wages, $18,500; quantity of wool used, 125,000 pounds; average amount of goods annually made, $135,000. This small territory has a population of more than 28,000, inhabiting six or seven villages, supporting one college, four chartered academies, six select seminaries of education, and upwards of one hundred common schools, with a proportionate number of churches, religious congregations and charitable societies. The climate is considered remarkably salubrious. From a meteorological journal kept at the academy in Utica, it appears that, for five years past, the mean annual temperature, indicated by the thermometer, has been 47° Fahr.; the average number of clear days in the year, 205; cloudy, 160; prevailing wind, west. The average quantity of water annually falling measured, by the rain-gauge, forty inches and ninety-five hundredths.

Utilitarians; a name given particularly to the school of Jeremy Bentham (q. v.), the advocates of "the greatest happiness principle," who test the value of all institutions and pursuits by the principle of utility, that is, the promotion of the greatest happiness of the greatest number. The estimation to be formed of this doctrine must obviously depend upon the idea which is attached to happiness. If by this be understood physical enjoyment chiefly, the principle is certainly low and narrow; for, although the physical comforts of a people are intimately connected with their moral and intellectual well-being, and their progress in religion and virtue, in the sciences and the arts, will depend greatly on the fact of the mass of the people having a full supply of nutritive food, or being pinched for the necessaries of life; yet we must reflect that, if man's true welfare consists in the highest improvement of his nature, the greatest good is often found, not in physical gratification, nor in any form of what is usually called pleasure, but in the hard trials of adversity. This subject requires a much fuller consideration than we can give to it here. We would only remark that, at a time when the word "utility" has become so general a favorite, it should not be forgotten that utility has reference only to means, and necessarily supposes an object of a higher character to which they are to be applied. However far we may carry the idea of utility, we must stop somewhere, and admit that there is something beyond, of which utility cannot be predicated. The idea of utility has even encroached upon the province of morality, as if our age could not love and do good for its own sake. We are told that we should be virtuous. In what way is virtue useful? our age replies. The answer is, Because it makes men happy. But every one knows that virtue does not make us happy in the lower sense of the word, in which it is almost synonymous with "comfortable." It is, then, mental and moral happiness, serenity of mind, for which virtue is useful. But a thorough utilitarian might ask, For what is this state of mind—namely, the happiness of a good conscience—useful; and, if told, Because it gives the assurance of the favor of God, might go on to inquire, For what is it useful to please God? The reader sees how pitiful is the application of utility to the highest objects of existence. Utility, then, cannot be considered as the ultimate principle of morality. It is equally defective when considered as the main-spring of the highest intellectual activity. Had not men of an elevated caste delighted in the pursuit of truth for its own sake, and pressed on through labor and difficulty, unconcerned as to the practical application of their discoveries, the world would never have witnessed those noble examples of intellectual effort which raise our ideas of human nature; and many of the inventions which have proved of the highest *utility* would never have been made. The disposition to pursue truth for its own sake may, indeed, be abused, 1. by being directed to worthless objects; as, for instance, a man may spend as much time in investigating the question, whether buttons were used by the Greeks and Romans, or what was the material of the riding-whip which Louis XIV held when he ordered the parliament to register his edicts, as Bessel did in ascertaining the thickness of the ring of Saturn. But those truths which attract a noble mind are such as serve to unfold the nature of God and of his works; which reveal the constitution of man, as exhibited in history, and analyzed by philosophy; which determine the laws that maintain the life and activity of organized beings, and preserve the order of the material universe. 2. The love of abstract truth may be too exclusive, as we believe to be often the case among men of science in Germany, who sometimes entertain a contempt for the practical application of knowledge. We would remark, however, by the way, that the rashness with which the philosophers of Germany sometimes speculate, is not to be attributed to their views respecting scientific truth, but to the rapid generalization to which retired students are prone. The conclusion to which the above observations naturally lead is, that truth, goodness, honor, liberty, are to be loved and followed for their own sake, or, what amounts to the same thing, for the sake of pleasing God. The noblest course is the most truly useful.

Utopia; a name made by sir Thomas More, from οὐτοπος (no place), and applied by him to an imaginary island, which he represents as discovered by a supposed companion of Amerigo Vespucci, who describes its condition to More, at Antwerp, in 1514. The author describes, in this work, many imaginary perfections in laws, politics, &c., in contradistinction to the defects of those which then existed. The views are often far in advance of his time; and the vices and absurdities of Europe are keenly satirized. The *Utopia* was written in 1516, in Latin. An accurate edition was first printed by Erasmus's printer, Froben, at Basle, in 1518, after an incorrect one had been published in Paris. The following specimen of Utopian etymologies may amuse some readers:—

Achorians,	α-χωρη,	of no country.	
Ademians,	α-δημος,	of no people.	
Anyder (a river),	α-υδωρ,	waterless.	The invisible city is on the river Waterless.
Amaurot (a city),	α-μαυρος,	dark.	

The Austrian general Schrebelin, towards the end of the seventeenth century, drew up a moral-satirical map, under the title, *Tabula Utopiæ oder Schlaraffenland.*

Utraquists. (See *Calixtines*.)

Utrecht; a province in the kingdom of the Netherlands, with a population amounting, in 1827, to 122,395. Its capital is the city of the same name.

Utrecht (in Latin, *Ultrajectum*, *Trajectum Inferius*, *Trajectum Ultricensium*, and *Antonia Civitas*); a city of the Netherlands, capital of the above province; 18 miles south-south-east of Amsterdam; lon. 5° 7′ E.; lat. 52° 6′ N.; population, 36,000; houses, 8000. It has 36 bridges over canals. It is situated on a branch of the Rhine, called Old Rhine, on a slight elevation, having a dry soil, and an atmosphere dry and healthy. Its form is nearly square; it is surrounded by an earthen mound and moat, and, exclusive of its suburbs, is about three miles in circuit. The approaches to it are exceedingly beautiful, particularly that from Amsterdam, which consists of a broad avenue, bordered with rows of trees. The streets are of tolerable width, and intersected by canals, the level of which is about twenty feet below that of the pavement. The aspect of the city is antique: the houses are mostly of brick, built in the Gothic style. It contains an ancient, splendid cathedral, also seven Dutch Reformed churches, one French Reformed, one English, one Lutheran, one Arminian, one Mennonist, and three Catholic; a town-house, a university, hospitals, and other charitable establishments. The cathedral, now partly in ruins, is a remarkable edifice: the tower, still entire, is said to have a height of 464 feet; and from its top, in a clear day, may be seen no less than fifty-one towns, great and small. The mall, situated outside of the walls, is a beautiful public walk. The trade is considerable, having the advantage of an inland navigation: the manufactures are on a small scale. The university, though less famous than that of Leyden, is of considerable note. It was founded in 1630, and has five faculties, nineteen professors, a library, botanic garden, anatomical theatre, cabinet of natural history, and an observatory. Utrecht is famous as the place where, in 1579, was concluded the union of the Seven Provinces; and also the well-known treaty between the French and allies, in 1713.

The *Peace of Utrecht* is important in the history of the European balance of power, because it placed England at the head of the European states, and put a check to the ambition of France. The death of Charles II, king of Spain, the last of the house of Hapsburg in that country, Nov. 1, 1700, occasioned the Spanish war of succession, which called all Europe to arms, and lasted till 1710. The question was, whether the crowns of Spain, the Netherlands, Naples and Sicily, Milan, and the vast Spanish possessions in America, should be united with Austria, already so powerful, or with France, which was less formidable. The emperor Leopold I claimed the whole of these dominions for his second son, Charles (subsequently the emperor Charles VI). Louis XIV claimed the crown for his second nephew, Philip of Anjou (subsequently king Philip V), on the ground of the testament of Charles II. England, the German empire, and the states-general, took part in the war on the side of the former, while Bavaria and Cologne sided with France. William III, king of England and stadtholder of Holland, had been the founder of the league against France; and Anne, his successor, adopted his political views. After several bloody campaigns, Louis XIV was inclined to yield; but the death of the emperor Joseph I (successor of Leopold I), in 1711, changed the face of affairs; and, at the same time, the tories rose in favor with the queen. They were for peace, and displaced the whigs and the war party, at the head of which was Marlborough. As Charles of Austria, brother of Joseph I, had come into possession of Austria, Hungary, Bohemia, and the dignity of German emperor, the addition of the Spanish crown would have given him a degree of power fatal to the balance of Europe. The English court, therefore, showed a willingness to enter into negotiations for peace, which had already been several times commenced in vain. The disgrace of Marlborough, caused, as is said, by French intrigue, or, as others say, by the pride of the queen, offended by the duchess of Marlborough, was favorable to the negotiations. Count Tallard, who lived as a prisoner of war in England, made the first proposals to Bolingbroke, who had risen to power after the fall of the whigs; and, in October, 1711, the preliminaries were made public. England declaring that she was willing to conclude a separate peace, the emperor was obliged to consent to a congress; and Utrecht was chosen as the place of meeting. The most distinguished of the ambassadors assembled there were the marshal d'Uxelles and the abbé Polignac on the part of France, the bishop of Bristol for England, and count Sinzendorf for the Roman emperor. France offered to acknowledge the dynasty then occupying the British throne; to demolish the fortifications of Dunkirk; to cede the islands of St. Christopher, Newfoundland, &c.; to give up Hudson's bay, with the reservation of the cod fishery; to cede to the states-general Ypres, Knocke, &c.; and to conclude a treaty of commerce with them;—in return for which she required Douay, Bouchain, &c. She also agreed to renounce all claims upon the Italian countries belonging to the Spanish monarchy; in return for which the house of Hapsburg was to give up all claims to the Spanish throne; on the Rhine, the frontiers were to remain the same as they had been before the war; the electors of Bavaria and Cologne were to be restored to all the rights which they had enjoyed before the war; in return for which she was to acknowledge Prussia as a kingdom; the crowns of France and Spain were never to be united in one person, &c. The emperor demanded that France should restore every thing which she had received by the peaces of Münster, Nimeguen and Ryswick, as well as all the conquered places in Spain, Italy and the Netherlands, and that the whole of the Spanish possessions should devolve upon the house of Hapsburg. England demanded the acknowledgment of the Protestant succession; the removal of the Pretender from France; the cession of the islands of St. Christopher, &c.; the conclusion of a treaty of commerce, and a proper indemnification for the allies. The French diplomatists soon found opportunity to interrupt the negotiations, in order to bring about a separate peace with England, in which case they hoped to obtain more moderate conditions from the others. The queen of England, in fact, concluded an armistice, by which the operations of her allies were impeded; and the emperor was at last obliged to give up Spain, and to enter into a disadvantageous treaty of evacuation. Aug. 19, France and England agreed on the chief points. The states-general, Portugal, Prussia, Savoy (which received Sicily), &c., joined in the negotiations; and thus France effected, April 11, 1713, nine separate treaties at Utrecht. England obtained from France every thing mentioned above, from Spain Gibraltar and Minorca, with the trade in negroes to the Spanish West Indies, and laid the foundation of her naval power, which has since become so gigantic. In this respect, also, the treaty of commerce and navigation, signed on the same day, is remarkable, the principles of which Napoleon wished to carry into effect against England one hundred years later. The seventeenth article provided that it should be lawful for all the subjects of Great Britain to sail to ports at war with France, and for those of France to sail to ports at war with Great Britain, and not only to go from the hostile ports to a neutral one, but also from a neutral port to a hostile one. This privilege of passage was to comprehend all persons on board of the vessels not soldiers; and, by article eighteen, this liberty was extended to all goods on board of the vessel, even if they should belong to the enemy, contraband of war excepted. The commercial liberty of neutrals was acknowledged, and the principle that "free ships make free goods."—See *Le Traité d'Utrecht réclamé par la France*, &c. (Leipsic, 1814).—England felt, on the occasion of this treaty, what influence she might have on the continental powers; as her secession forced her allies to make similar treaties. By this secession, she obtained advantageous conditions; for the formidable Dunkirk was incapacitated from doing her harm; she obtained Hudson's bay, and great consequence in the West Indies, the possession of Gibraltar, and, through this, the command of the Mediterranean. Peace was not concluded at Utrecht with the emperor and the empire: the negotiations were not brought to the desired close until 1714, at Rastadt and Baden. Spain and Austria were not reconciled to each other until the treaty of Vienna, April 30, 1725. (See *Louis XIV*, *Eugene*, and *Marlborough*.)

UT, RE, MI, &c. *Ut*, in music, is the first of the syllables by which, to this day, the tones of the diatonic scale are designated in France and Italy. Guido d'Arezzo, a Benedictine monk, and, at a later period, abbot at Avellana, a native of Arezzo, was distinguished, in the eleventh century, by his method of instruction in singing, and the important improvements which he introduced into music. Until his time, the want of a proper designation of the tones of the octave made it necessary to practise, with much labor, the *canto fermo*, so called, the only method of singing then in use; and the difficulty was increased as the proportion of the semitones to the various tetrachords could not well be determined; and hence a false intonation was almost always the consequence. In dividing the compass of the tones then in use, he employed, instead of the Greek tetrachords (a series of from four to four tones), the hexachords (a series of six tones), of which the first began with C, the second with F, the third with G, which hexachords contained the whole compass (called, by the Greeks, a *diagram*) of the diatonic tones then in use. Each of his hexachords contained six diatonic tones, which he named from the initial syllables of the hemistichs of a hymn to St. John the Baptist, probably in order to exercise his pupils in the distinct pronunciation of the vowels. The syllables which he used were the italicized ones of the following lines:—

Ut queant laxis *Re*sonare fibris
*Mi*ra gestorum *Fa*muli tuorum,
*Sol*ve polluti *La*bii reatum,
Sancte Johannes.

Thus originated the mode of designating the six diatonic tones, C, D, E, F, G, A, by the syllables *ut*, *re*, *mi*, *fa*, *sol*, *la*. After Guido's time, the syllable *si* (the initial letters of Sancte Johannes, in the last line of the above strophe) was added for the sound B of our scale, in order to fill the scale up to the octave; and, as the increasing extent of the compass of the tones required, the number of hexachords, or rather heptachords, was augmented. But as, according to the fundamental rule of Guido's solmization, the syllables *mi*, *fa*, must always fall upon the semitones, as this is established by the first hexachord in respect to the semitone E (*mi*), F (*fa*), the subsequent hexachords are to be so arranged that *mi*, *fa*, shall always be given to a semitone; and this change of the commencement of a new hexachord is called *mutation*. To the mutation it is owing that every syllable not only determines one tone, but that the tones are sometimes designated by one, sometimes by another syllable, according to the situation of the semitones (*mi*, *fa*), as *mi* must always be preceded by *re*. We must further observe that the seventh syllable, *si*, in general, only designates the seventh tone, so that it is taken for B as well as B flat, but is not reckoned in the hexachord. If we therefore put several such hexachords one under the other, according to the rule of mutation, thus,—

C	D	E	F	G	A	H*	or,	B b	c	d	e	f	g	a	&c.
ut,	re,	mi,	fa,	sol,	la,	-		-	-	-	-	-	-	-	
			ut,	re,	mi,	-		fa,	sol,	la,	-	-	-	-	
				ut,	re,	mi,			fa,	sol,	la,	-	-	-	
									ut,	re,	mi,	fa,	sol,	la,	&c.,—

* The English B.

the tone C receives the appellation *ut, sol, fa*, the tone D the syllables *re, la, sol*, &c.; hence the Italians designate the six tones of the hexachord (named, in English and German, from these letters of the alphabet) in the following way:—

German appellation, ...	c	d	e
Italian "	sol, fa, ut,	la, sol, re,	la, mi,
German "	f	g	a
Italian "	fa, ut,	sol, re, ut,	la, mi, re.

The German H (the English B), the lower semitone of C, the Italians call B *mi*, and the German B (the H lowered by b) they call B *fa*. The tones elevated by # they designate by the additional word *diesis*; for example, C# is called *sol, fa, ut, diesis*; D# is called *la, sol, re, diesis*, &c. The tones lowered by b they designate by *bemolle*; for example, D b is called *la, sol, re, bemolle*; E b is called *la, mi, bemolle*, &c. In singing, the Italians, moreover, use, instead of the syllable *ut*, the syllable *do*; hence not *ut, re, mi*, &c., but *do, re, mi*, &c. The French, likewise, still use Guido's names of tones, but not in the same way with the Italians; because, with the former, each syllable signifies the tone of the natural scale only; hence *ut* signifies only C, *re* only D, &c. With them, also, H is not called B *mi*, but only *si*; and our B b not B *fa*, but *si bémolle*, as they also call the flat tones *bémolle*, and the sharp ones *dièse*; for example, D b, E b, A b, &c., *re bémolle, mi bémolle, la bémolle*; and C#, D#, F#, &c., *ut dièse, re dièse, fa dièse*, &c. Guido is said, moreover, to have introduced the notes, or points upon five lines, one above the other, in order to designate by them the heights which had previously been indicated by Latin letters. He also enriched music by the invention of the C and F clefs, and increased the diagramma of the Greeks, consisting of fifteen chords, to twenty-one (two octaves and a sixth—

$$\mathrm{F\ A\ B\ C\ D\ E\ F\ G\ a\ b} \;\Big|\; \mathrm{c\ d\ e\ f\ g}\begin{smallmatrix}\mathrm{a} & \mathrm{b}\\ \mathrm{a} & \mathrm{b}\end{smallmatrix}\Big|\begin{smallmatrix}\mathrm{c} & \mathrm{d}\\ \mathrm{c} & \mathrm{d}\end{smallmatrix}\Big)$$

which system, since that time, after the Greek *gramma*, has also been called *scala*, or *main harmonique* (harmonic hand). The latter name arose from the circumstance that Guido had, in order to assist the student, drawn a left hand, on the fingers of which were marked, by letters, the tones of the harpsichord, according to the rules of the changes which it was necessary to adopt before the addition of the seventh tone (*si*, or H), in order to rise or fall beyond the six tones used according to the ancient way in the *solfeggio*. (q. v.) He further determined the extent, the proportion and the intervals, as well of the octaves among each other as of the fifths and fourths. He is likewise said to have invented the polyplectrum, or spinet. These inventions and discoveries, which have had the greatest influence upon the developement of harmony, have been, however, in part denied to him, and are said by some to have been made at an earlier period, by others at a later. The establishment of the musical scale, however, is undeniably his, and has been of the greatest importance as affording the means of learning that well within a few weeks which formerly could be acquired only by the zealous application of years.

Of his life we only know that he had to suffer much from enemies, envious of his fame, and therefore was obliged to leave his convent for some time, and to retire to his native city. He was much favored by popes Benedict VIII and John XIX or XX; and the decree of this latter pope silenced, at last, the enemies of this great and learned inventor. On his return from Rome, he settled in the convent of the abbot of Pomposa, in the duchy of Ferrara, at the request of the abbot himself. He wrote here several musical treatises, particularly his compendium entitled *Micrologus*. Gerbert, abbot of St. Blasius, in the Schwartzwald, has collected, in his *Scriptores ecclesiastici de Musica sacra*, every thing that he could obtain of Guido's works, which, however, at present, are valuable only as antiquities. The time of his death cannot be given with certainty.

Utzschneider, Joseph von, born in 1763, at Rieden, in Bavaria, in 1773 commenced his studies at Munich, and, in 1783, became doctor of philosophy at the university of Ingolstadt. He was made administrator of the government saltworks in the principality of Berchtoldsgaben, and afterwards connected with the department of the finances. He afterwards founded, at Benedictbeurn, in connexion with Fraunhofer (q. v.), the optical institute, which has since become so celebrated. He was afterwards again intrusted with the administration of the saltworks. In 1811, he was put at the head of the board for administering the sinking fund. After the peace of Paris, in 1814, he requested his discharge, and established a cloth manufactory. He was a member of the diet of Bavaria. In 1827, he was appointed to take charge of a polytechnical school, to be established in Munich.

Uwaroff, Sergius de, since 1824, imperial Russian privy-counsellor, since 1818, president of the Russian academy of sciences at Petersburg, has published various treatises on archæological and historical subjects. Among these are *Essai sur les Mystères d'Eleusis* (on the ante-Homeric period); Nonnus of Panopolis (Petersburg, 1817); *Examen Critique de la Fable d'Hercule* (against Dupuis's *Origine de tous les Cultes*). In 1822, he was made director of the department of manufactures and internal commerce. By his *Projet d'une Académie Asiatique* (1810), he gave the first impulse to the study of the Asiatic languages in Petersburg; upon which a department for Oriental languages was founded in the academy, and also an Asiatic museum, and two professorships for the same study in the university. Alexander also founded, in 1823, in connexion with the department for foreign affairs, an institution in which pupils are instructed in Arabian, Persian and Turkish. Mr. Adelung has the direction of the latter. Means have since been provided for instruction in Oriental tongues, in other cities of the empire, as Casan, Omsk, Tiflis, Astrachan, &c.

Uz, John Peter, a German poet of note, was born in 1720, in Anspach. He studied law, received various legal appointments, and died in Anspach, in 1796. Ch. F. Weisse published his poetical works at Vienna, 1804, in two volumes. Uz is distinguished, as a lyric poet, for his mirthful strains, and for his hymns, of which several are yet sung in the German Protestant churches. His epistolary style is easy.

V.

V; the twenty-second letter of the English alphabet, a labial, formed by the junction of the upper teeth with the lower lip, and a gentle expiration. *V* differs from *f* principally in the circumstance that the breath is emitted more gently in pronouncing it. (See *F*, and *B*.) It is, like *f*, a semi-vowel. The English *v* corresponds in sound nearly to the German *w*, and therefore belongs to the class which the Germans call *Blaselaute*. The Germans have the character *v*, but it generally has the same sound with *f*, as in *Vater* (pronounced *fater*). Sometimes it corresponds to the German *w*, as in *Pulver*. The Romans had two different characters for the small letters *u* and *v*, but the capital *V* was common to both: hence many other nations, who received their alphabet from the Romans, continue to confound these letters. V, as a numeral, denotes 5: when a dash was added at the top, thus, V̄, it signified 500. V. R. with the Romans stood for *uti rogas*. (See *Suffrage*.) V. D. D. stood for *voto dedicatur*; V. G., *verbi gratia*; V. L., *videlicet*. On French coins, it signified the mint of Troyes. In music, V is used for the abbreviation of the word *violin*; and, when written double, implies both first and second violin. In ancient music, it had several other meanings. V. S. are the initials for the Latin *verte subito*, or the Italian *volti subito* (turn over quickly).

Va (*Italian*); go on; as, *Va crescendo* (Go on increasing).

Vaccination; inoculation with the cow-pox. This is a poison, derived from certain specific sores on the teats and udders of cows, and capable of being communicated by accidental contact, where the cuticle has been removed, or by means of inoculation, to the human subject. That subjects who have taken the vaccine disease accidentally, were thereby secured from the small-pox, was popularly known in several of the dairy counties of England. But it was reserved for Jenner to show, that the cow-pox could be propagated by inoculation, and that the inoculated disease possessed the same prophylactic power as the original disorder. Several years before Jenner wrote on the subject, some eminent physicians had heard of the fact, and mentioned it casually in their writings; but doctor Jenner was the first who wrote a treatise, with the express view of bringing the remedy into general application. This was in 1798; and the treatise was entitled an Inquiry into the Causes and Effects of the Variolæ Vaccinæ, a Disease discovered in some of the Western Counties of England, particularly Gloucestershire, and known by the Name of the Cow-pox. The value of the discovery was at first a subject of warm controversy; but its great importance is now generally acknowledged. The cow-pox is not a merely local affection, but produces a general, though extremely mild, disturbance of the constitution, which is ordinarily so trivial as not to excite any alarm in the very youngest subjects. It seems probable, at present, that it is not an infallible security against the small-pox, although the number of failures is very small, when due allowance has been made for mistakes and misrepresentations. A small, inflamed spot, distinguishable about the third day, shows that the inoculation has succeeded. This increases in size, becomes hard, and rises above the level of the skin. A small quantity of fluid can be discerned in the centre on the sixth day, and the pustule increases until the tenth day. This fluid will communicate the disease by inoculation. On the eighth day, when the pustule is fully formed, the constitutional effects begin to appear, and manifest themselves by slight pain in the part, headache, shivering, loss of appetite, &c. These subside spontaneously in one or two days. During the general indisposition, the pustule becomes surrounded with a broad, circular, inflamed margin, called the *areola*. Afterwards the fluid dries up, and a dark-brown scab forms, which remains for about a fortnight, and, on disappearing, leaves a depression. The spot continues distinguishable through life, either by the circumstance of the depression, or of its color being somewhat lighter than that of the neighboring parts.

Vacuna; among the ancient Romans, the goddess of leisure and repose. It is said that she was worshipped even by the Sabines. The peasants sacrificed to her when the season of field labor was finished.

Vacuum, in physics; a space devoid of all matter. Whether there be any such thing in nature as an absolute vacuum, or whether the universe be completely full, is a question that has given rise to disputes among philosophers in all ages. The ancients distinguished a *vacuum coacervatum* and a *vacuum interspersum*, or *disseminatum*. By the former they understood a place destitute of matter, such as would exist if God were to annihilate all the air and other bodies within the walls of a chamber. By the latter they designated the space supposed to be naturally interspersed in and among bodies, in the pores of the same body, and in the interstices between different bodies.

Vademecum; a word compounded of three Latin words, signifying *Go with me*. The title was first given to an ascetic work—*Vademecum piorum Christianorum* (Cologne, 1790). It is now sometimes given to manuals, and to works of entertainment. It is also used to denote a favorite author, whom a person constantly carries with him.

Vaillant, Le. (See *Levaillant*.)

Valais (in German, *Wallis*), one of the twenty-two cantons of the Helvetic confederacy, borders on the Pays de Vaud, Berne, Uri, and Tessin, and the Sardinian territories. (See *Switzerland*.) It was formerly more populous than it is at present. It consists of sixteen small valleys and a large one, which extends from east to west, and is traversed by the Rhone, and bordered on the north and on the south by the loftiest summits of Switzerland. (See *Alps.*) Over the Bernard (q. v.) and Simplon (q. v.) lead two roads to Italy. In the northern chain, which separates Valais from Berne, are the most celebrated of the Bernese Alps, the Finsteraarhorn, Jungfrau, Shreckhorn, &c. The climate and productions are very various: the mountains are almost perpetually covered with snow and ice, while the valleys enjoy a warm climate and a fruitful soil, produce corn, wine and fruits, and furnish good pasturage. The breeding of cattle is the chief occupation of the inhabitants, who are also supported in part by the travel, particularly over the Simplon. There are here mineral springs; and iron, copper, lead, marble and coal are found in the mountains. The inhabitants are Catholics: those of Upper Valais speak German, and those of Lower Valais, French. They are accused of indolence and want of cleanliness: the goitre is common among them. In the middle ages, the country belonged to the kingdom of Burgundy, and, in 1032, was annexed to the German empire. Upper Valais afterwards rendered itself independent, conquered (1475) Lower Valais, which had been ceded to Savoy, and entered into a league with Berne, and, in 1529, with the Swiss confederacy. In 1810, it was annexed to France, under the title of the department of the Simplon, and, in 1815, was constituted the twenty-first canton of the confederacy.

Valckenaer, Louis Caspar, a celebrated Dutch philologist and critic, born at Leuwarden, in Friesland, studied ancient literature, philosophy and theology at Franeker, where, in 1741, he was appointed professor of the Greek language, and afterwards held the same post at Leyden, till his death, in 1785. He was distinguished for his profound and extensive learning; and his commentaries on several Greek authors are highly esteemed, particularly those on Theocritus, the Phœnissæ (1755), and the Hippolytus (1768) of Euripides, and on Callimachus (1799). His *Opera Philologica* were published at Leipsic in 1808 (2 vols.). His *Diatribe in Euripidis perditorum Dramatum Reliquias* was republished at Leipsic in 1824.

Valckenaer, Jan or John, son of the preceding, after completing his studies at Leyden, was appointed professor of law at Franeker. His literary reputation, and, particularly, his zealous attachment to the anti-Orange party, procured him, in 1787, the chair of jurisprudence at Leyden; but the return of the stadtholder obliged him to quit Holland the same year. Valckenaer then went to France, and, in 1793, was one of the deputies, to obtain from the convention the aid of French arms for the Dutch patriots. In 1795, he returned to Holland, and was appointed professor of public law, and, in 1796, was sent ambassador to Spain, and, at a later period, was employed on several important missions to other countries. When Louis Bonaparte, in 1810, made the last effort to prevent the union of Holland with France, Valckenaer was sent to Napoleon on the subject; after which he retired to private life, devoting himself, till his death, in 1821, to study. Among his works are his treatise *De Peculio quasi castrensi veteribus Jurisconsultis incognito*, and some legal opinions on political affairs.

Val D'Arno; the valley of the Arno, which runs by Florence. (See *Arno.*)

Val di Demona. (See *Demona.*)

Valdivia; a city and strong fortress of Chile, on the river of its name, three leagues from the sea. It was founded in the year 1551, by the conqueror Pedro de Valdivia, who gave it his name, and obtained immense sums of gold from its vicinity. In 1590, it was taken and plundered by the Araucanians (q. v.), the native inhabitants of the country. It was again rebuilt and fortified by the Spaniards. The harbor is situated in a beautiful bay formed by the river, and is the safest, the strongest from its natural position, and the most capacious, of any of the ports in the South sea. The town contains a college, built by the Jesuits, several convents, a parochial church, and a public hospital. It is one hundred and eighty-three miles south of Conception.

Valencia; a city of Spain, capital of the province of the same name, on the Guadilaviar, two miles from the sea; one hundred and seventy miles south-east of Madrid; lon. 23′ W.; lat. 39° 29′ N.; population, about 80,000 in the city, and 20,000 in the villages and environs. It is situated in a fertile tract of country, and has a mild and pleasant climate. It contains a cathedral, seventy-four churches, forty convents, sixteen hospitals, two public libraries, an academy of painting, a college, a custom-house, and a university. The *Alameda* is a delightful walk, bordered with orange, pomegranate and palm trees, and the air is perfumed with the mulberry, lemon and orange trees of the environs. The streets are narrow, winding, and crossed by a multiplicity of lanes. Many of the buildings are without chimneys. The university was founded in 1470, and has 58 professors and 1500 students; but the course of study is antiquated. The inhabitants excel in the arts more than in literature. The principal manufacture is that of silk. The maritime trade is carried on by lighters, which load and unload vessels at the village of Grao, near the mouth of the river. It is an ancient town, supposed to be the *Valentia Edetanorum* of the Romans, and was the capital of the kingdom of Valencia, which continued from 713 to 1238. It is now an archbishop's see.—The province of Valencia (255,000 inhabitants) lies between the Mediterranean sea, Murcia, Cuenca, Arragon and Catalonia. It is the Eden of Spain, and enjoys the finest climate in Europe. The face of the country is diversified with hills, valleys and small plains, well watered by numerous streams. The Alicant wine, olives, and other fruits, corn, flax and hemp, with bees, silkworms, and rich mineral productions, are among its riches. Manufactures are also flourishing, and, in the city of Valencia, upwards of 22,000 workmen are engaged in the manufacture of silk stuffs and stockings.

Valenciennes; a city of France, situated on the Scheldt, which runs through the town in several places, and here becomes navigable; lon. 3° 36′ E.; lat. 50° 21′ N.; population, 16,918. The form of the town is circular; the streets narrow and crooked; the houses generally old and ill built, many of them of wood; the chief manufactures, lace of great fineness, cambric, gauze and linen stuffs. The public square is handsome. It is supposed to have derived its name from the emperor Valentinian I, who, pleased with the temperature of the climate, and charming situation of the place, laid the foundation of a town, about the year 367, endowing it with many privileges. It was taken by the allies, in 1793, after a severe siege, but was given up to the French in 1794.

Valentine, St., is called by some ecclesiastical writers bishop, but, according to others, was only a presbyter. He suffered martyrdom in the reign of the emperor Claudius II, having been beheaded at Rome, and was early canonized. He was so eminently distinguished for his love and charity, that the custom of choosing Valentines, or special loving friends, on his day (Feb. 14), is supposed by some to have originated from thence: others deduce it from the birds choosing their mates on this day; but it is more likely to be a corruption of a practice during the Roman *Lupercalia*, when the names of young women were put into a box, and drawn out by the young men.

Valentini, George William, baron von, lieutenant-general in the Prussian service, a military writer of reputation, was born in 1775, and educated in Berlin. He served as a lieutenant in the campaign on the Rhine against the French, and, after the peace, wrote a treatise on Partisan Warfare, which has gone through four editions. In 1805, he served against the Swedes as a captain In 1809, he served in the Austrian army as aid-de-camp of the present king of the Netherlands, and published, after the peace, his History of the Campaign of 1809. In 1810, he served in the Russian army against the Turks. In 1811, he returned to the Prussian service, and was of much use in the campaigns of 1813, 1814 and 1815. After the peace, he was made commandant of the fortress of Glogau, in Silesia, where he wrote his Treatise on War, in Reference to Great Operations (Berlin, 1821—24, 3 vols.).

Valentinian; the name of three Roman emperors. *Valentinian I*, son of Gratian, a distinguished general, was born in Pannonia, and ascended the throne A. D. 364. He divided the government of the empire with his brother Valens, to whom he intrusted the eastern provinces. Brave, but ignorant, rude, and addicted to the grossest debaucheries, Valentinian was unable to arrest the decline of the empire. He died in 375. (See *Rome, History of.*)—*Valentinian II*, son of the preceding, administered the government after the death of his elder brother Gratian (383), under the regency of his mother, Justina, and was killed by one of his officers, Arbogastes, a Gaul, in 392.—*Valentinian III*, son of Constantius and Placidia, a daughter of Theodosius the Great, was proclaimed emperor (425), in the sixth year of his age, on the death of his uncle Honorius. (See *Western Empire.*) During his reign, Spain was overrun by the Suevi and the Visigoths (see *Goths*), Africa by the Vandals, Britain by the Anglo-Saxons, Gaul by the Franks, and Italy by the Huns under Attila. Feeble and voluptuous, he perished by a conspiracy in 455. (See *Vandals.*)

Valentinians. (See *Gnostics.*)

Valentinois, Duchess of. (See *Diana of Poitiers.*)

Valeria. (See *Coriolanus.*)

Valerian (*valeriana*). These plants are mostly herbaceous, with simple, opposite, pinnatifid leaves, and small flowers, usually disposed in a corymb or panicle. They are distinguished from most dicotyledonous plants by having three stamens, a number almost exclusively belonging to the other great division of vegetables. The species are numerous in the northern and temperate parts of the eastern continent. We have one in our Western States, and a second in Canada. The root of the officinal valerian has an acrid and somewhat bitter taste, and a strong, disagreeable odor. It has been employed in medicine, principally in epilepsy and hysterical affections, but sometimes as a vermifuge, and in intermittent fevers. Cats are excessively fond of this plant, so much so that it is difficult to preserve it in a garden; and ratcatchers employ the roots to draw the rats together, as they do oil of anise. Other species have the same properties in a greater or less degree.

Valerian, Publius Licinius, Roman emperor from A. D. 253 to 260, was born in 190. He was descended of a noble family, and had distinguished himself, in several campaigns, for his military skill, and in general bore the character of great magnanimity and virtue. The emperor Decius having determined to revive the censorship, for the purpose of checking the decline of the empire, Valerian was unanimously named for this post by the senate. But the corruption of Roman manners was too great to be cured by the appointment of a censor. Being declared emperor by the legions at the age of sixty-three years, he associated his son Gallienus with himself in the government. But the position of the Roman empire was such, that the whole period of their united reign was little else than a scene of internal confusion and foreign war. In the year 225, a new Persian empire had been founded in Asia by Artaxerxes; and his successor, Sapor, endeavored to recover the Persian provinces which had been conquered by the Romans. Valerian marched against him at the head of his army, but was defeated and made prisoner near Edessa (260). If the accounts of historians are not exaggerated, Sapor treated him in a most unworthy manner. The unhappy old man was daily exposed to the insults of the people, and Sapor mounted on horseback by placing his foot on the neck of his captive. When Valerian died of grief, his skin was stuffed, and preserved by Sapor as a trophy of victory. The truth of this story is, however, doubted by Gibbon (ch. x.).

Valerius; the name of many Romans. The most distinguished of this name is the chief instigator of the conspiracy against the last king, Tarquinius Superbus, and was famed for his love of liberty, of his country and of justice, which procured him the surname of *Publicola*, or *Poplicola* (friend of the people). He and Brutus were the first consuls of the new republic. He retained the office after the death of Brutus, for some time exercised it alone with the greatest impartiality, and made several ordinances of great benefit to the people, and highly conducive to civil freedom. He was consul three times successively in a period of tranquillity, and also distinguished himself as a general by his courage and conduct. Amongst others, he subdued and triumphed over the Sabines. Soon after, he died so poor that his remains were interred at the public expense. A monument was erected to his memory in the forum. The Roman women wore mourning for him a year, as they had done for Brutus.

Valerius Maximus; a Roman historian, who lived in the reign of the emperor Tiberius. He served in Asia under Sextus Pompeius, and, returning to Rome, appears to have taken no part in public affairs, but devoted his leisure to the composition of his *Dicta et Facta Memorabilia*, a collection of anecdotes and observations. On the revival of literature, it was one of the earliest books which issued from the press after the invention of printing. Among the best modern editions are those of Torrenius (Leyden, 1726, 4to.), of Kapp (Leipsic, 1782, 8vo.), and of Helfrecht (Hoff, 1799, 8vo.).

Valerius Flaccus, Caius. (See *Flaccus, Caius Valerius.*)

Valetta. (See *Malta.*)

Valette, La, count de. An account of him is given under *Lavalette*; and we have to add here, only, that he died Feb. 15, 1830, and that his relations have since published his Memoirs, which have been translated into English.

Valhalla. (See *Northern Mythology.*)

Valide; **Sultana Valide.** (See *Harem.*)

Valkyrias. (See *Northern Mythology.*)

Valla, Laurence, a celebrated philologist, was born at Rome in 1406 or 1415. At Pavia he was made professor of rhetoric; but, the plague having dispersed the members of the university, he lectured at Milan, Genoa and Florence. At length he became known to Alphonso, king of Arragon, whom he followed in his wars and travels from 1435 till 1442, when that prince made himself master of the kingdom of Naples. In 1443, on the return of pope Eugenius to Rome, he settled in that city. A work on the pretended donation of Constantine to the holy see, reflecting on the characters of some of the popes, having excited the displeasure of Eugenius, Valla returned to Naples, and opened a school of eloquence, to which many scholars resorted. He narrowly escaped suffering in consequence of the freedom with which he attacked notions sanctioned by antiquity; and it was to the influence of Alphonso that he owed his preservation from the vengeance of the inquisition. At length he was invited to Rome by Nicholas V, and there commenced giving lectures on rhetoric in 1450. He engaged in a literary dispute with George Trapezuntius, on the comparative merits of Cicero and Quintilian, and carried on a controversy with Poggio, which was conducted with much illiberality and virulence by both parties. He died in 1457 or 1465. Among the revivers of literature, Valla has always held a high rank, which he merited by unwearied application and an enlarged course of study, including history, criticism, dialectics, moral philosophy and divinity. Of his numerous writings his treatise *De Elegantia Latini Sermonis* still maintains its reputation. His original works were published together at Basle in 1543.

Valladolid, or Mechoacan; a city of Mexico, and capital of a state of the same name (see *Mechoacan*); one hundred and eight miles west of Mexico; lon. 102° 11′ W.; lat. 20° 5′ N.; population, 18,000. It is situated on a river near the west side of a lake, which abounds with fish. It is the see of a bishop, and contains a cathedral, a college, an hospital, and several convents. The elevation of the town above the sea is 6396 feet.

Valladolid, State of. (See *Mechoacan.*)

Valladolid; a city of Spain, in Leon, capital of a province of the same name, on the Pisuerga, at the junction of the Esgueva, which flows through the town; 84 miles north-west of Madrid; lon. 4° 47′ W.; lat. 41° 42′ N. It is situated in the midst of an extensive plain, and contains a cathedral, sixteen parish churches, forty-six convents, three hospitals, and a university, with 1250 students; population, 30,000. The manufactures consist of silks, coarse woollens, and earthen ware. It is a bishop's see, and was formerly more important than at present. The streets are dirty, many of the houses in decay, and half-finished edifices are the chief indications of its ancient splendor. Philip II was a native of Valladolid, and made it the occasional residence of his court.

Valle, Pietro della, a celebrated traveller of the seventeenth century, born at Rome, in 1586, of a noble family, has left us accounts of his travels, which, though not free from credulity, and a love of the marvellous, are highly interesting. Valle received a good education, and had already become distinguished for his acquisitions, when an unhappy passion, and some other difficulties, induced him to quit Rome and go to Naples. Here he came to the resolution of making a pilgrimage to Palestine, and, going to Venice, embarked there for the East in 1614. He visited Turkey, Egypt, Arabia, Persia and India, passing upwards of eleven years in these countries, and studying the languages and manners of the inhabitants. At Bagdad he married a beautiful Georgian, Sitti Maani, of whom, however, he was soon deprived by death. This calamity hastened his return; and, in 1626, he arrived in Rome, with a numerous retinue of Eastern followers, and soon after married a servant of his first wife, also a Georgian. Here he lived, devoted to the arts and to scientific pursuits, and wrote an account of his travels. This work, consisting of fifty-four letters, shows the various acquirements of the author to advantage. He died at Rome, in 1652.

Vallière, Louisa Frances de la Baume le Blanc, duchess de la, mistress of Louis XIV, descended from the ancient noble family De la Baume, was lady of honor to the wife of the duke of Orleans. For two years, she cherished a secret passion for Louis, who finally noticed her. In the height of her power, which she used only to do good, her conduct never belied her gentle disposition. The king raised the estate of Vaujour and the barony of St. Christophe to a duchy and a peerage in favor of her and her children. Superseded in the affections of Louis by Mad. de Montespan, Mlle. de Vallière retired into the Carmelite convent in the suburb St. Jacques, where she assumed the name of sister Louisa de la Miséricorde, and died in 1710. She is considered the author of *Réflexions sur la Miséricorde de Dieu.* Mad. de Genlis has written a historical romance founded on the events of her life, and Lebrun executed a penitent Magdalen, of which the face is from her portrait.

Vallisneria; a very extraordinary plant, a submersed aquatic of the natural order *hydrocharideæ.* It is found in Italy and France, and grows in large quantities in the still waters of most of the principal rivers from the Delaware to the Mississippi, near their banks. It presents partly submerged fields of narrow, linear three-nerved, grass-like, olive-green leaves, of a thin and semitransparent substance, as is usual in all herbage growing under water. From the bosom of some of these arise staminiferous flowers, contained in an ovate, two-parted spathe. The enclosed spadix is covered with very minute flowers, each consisting of a three-parted calyx with two stamens. These, when mature (from the depth at which they are submerged, and the shortness of the peduncle of the spathe), have no means of attaining the surface of the water but by breaking their connexion with the parent. As soon as it arises to the surface, the calyx instantly springs open, and the anthers burst; by which impulse, and the accidents of the element on which they are launched, they, in fact, migrate accidentally to the vicinity of the fertile flower, furnished with a long spiral peduncle, by which it is enabled to attain the surface of the water even at a variable depth. The spathe of the latter is bifid and one-flowered, the calyx three-parted and superior, the corolla of three petals, the stigma ligulate and bifid, the capsule valveless, one-celled, and the seeds numerous, attached to its sides.

Valmy. (See *Kellermann.*)

Valois, House of. (See *France.*)

Valombrosa; an abbey on the Apennines, belonging to the diocese of Fiesole, in the Florentine territory, where John Gualbert, the saint, founded an order of monks in 1038, subject to the rule of St. Benedict, and called the *order of Valombrosa*, from the place of its origin, or the *gray monks*, in reference to the former habit of the members. The original purpose of the institution was solitude and undisturbed devotion; but the life of the hermit was soon exchanged for a monastic constitution, and only a few hermitages were retained in the neighborhood of the monasteries. The original monastery, which Gualbert, from its situation in a thick forest of firs on the verge of the mountain, called *Valombrosa*, became rich by donations; and, in 1637, the society erected magnificent edifices. This order, however, which has always been simply of a devotional character, and was the first which admitted lay brethren, has never become widely extended, nor attained any great importance. Upon its union with the Silvestrines, 1662, a black dress was adopted. Valombrosa remained undisturbed during all the storms of the revolution, and was a resort of the priests during the French dominion in Italy. It is also of interest in the history of art. A monk of Valombrosa, father Henry Hugford, practised the art of painting on stone, known by the name of *scagliola* (q. v.), during his residence at the beautiful hermitage *Il Paradisino*, near Valombrosa. The art was subsequently much improved in Florence. This monastery still exists, and is often visited by devotees and travellers, who wish to enjoy the lovely prospect which it affords.

Valparaiso; the port of Santiago (q. v.), the capital of Chile, on a bay of the Pacific ocean, 55 miles south of Santiago, and 225 north of Conception; lon. 71° 45′ W.; lat. 33° 2′ S.; population, 10,000. Its situation is inconvenient for purposes of building, as it stands at the foot of a mountain, and so near to its cliffs that many houses are erected in the breaches and on the acclivities. It contains a parish church and two convents, and is inhabited chiefly by whites, mestizoes and mulattoes, who are engaged in the trade carried on with Peru and Europe. It has an excellent harbor, every where free from rocks and shoals, except to the north-east, where there is a sunken rock within a cable's length of the shore.

Valpy, Abraham John, son of doctor Valpy, is master of a reading school, and proprietor of an extensive printing establishment in London. He is an excellent classical scholar, and a rival of the three Manutiuses, and other learned printers of former times. He has published correct editions of various Latin authors, and a much enlarged reprint of Brotier's Tacitus. The works, however, on which his reputation chiefly rests are a new and improved edition of Stephens's *Thesaurus* in conjunction with Mr. Barker of Trinity college, Cambridge; and a splendid republication of the Delphin classics, with variorum notes and other additions. He was also the publisher of the Classical Journal and the Pamphleteer. Mr. Valpy, at a great expense, founded the first presses for printing Greek and Latin works in London.

Valteline; lordship of Austrian Italy, at the foot of the Alps, now forming the greater part of the province of Sondrio. It is bounded north by the Grisons, and was subject to these till 1797. Square miles, 1270; population, 81,000. This country, called by the Germans *Veltlin*, or *Veltlein*, and by the inhabitants *Valle Tellina*, is a valley, enclosed between two chains of lofty mountains, about fifty miles in length, and from eight to twenty in breadth. It is fruitful, and, throughout its whole extent, watered by the Adda. The whole country is divided into three districts, called Sopra, Mezzo and Sotto, or Upper, Middle and Lower. Tirano is the capital of the first, Sondrio of the second, and Morbegno of the last.

Value. The exchangeable value of commodities depends, at any given period, partly on the comparative facility of their production, and partly on the relation of the supply and demand. If any two or more commodities respectively required the same outlay of capital and labor to bring them to market, and if the supply of each were adjusted exactly according to the effectual demand; that is, were they all in sufficient abundance, and no more, to supply the wants of those able and willing to pay the outlay upon them, and the ordinary rate of profit at the time; they would each bring the same price, or be exchanged for the same quantity of any other commodity. But if any single commodity should happen to require less or more capital and labor for its production, while the quantity required to produce the others continued stationary, its value, as compared with them, would, in the first case, fall, and in the second, rise; and, supposing the cost of its production not to vary, its value might be increased by a falling off in the supply, or by an increase of demand, and conversely. But it is of importance to bear in mind, that all variations of price arising from any disproportion in the supply and demand of such commodities as may be freely produced in indefinite quantities, are temporary only; while those that are occasioned by changes in the cost of their production are permanent, at least as much so as the cause in which they originate. A general mourning occasions a transient rise in the price of black cloth; but, supposing that the fashion of wearing black were to continue, its price would not permanently vary; for those who previously manufactured blue and brown cloths, &c., would henceforth manufacture only black cloth; and, the supply being in this way increased to the same extent as the demand, the price would settle at its old level. When the price of a freely produced commodity rises or falls, such variation may evidently be occasioned either by something affecting the commodity, or by something affecting the value of money. But when, instead of being confined to one, the generality of commodities rise or fall, the fair presumption is, that the change is not in them, but in the money with which they are compared. Exclusive, however, of the commodities now alluded to, there is a considerable class, whose producers or holders enjoy either an absolute or a partial monopoly of the supply. When such is the case, prices depend entirely or principally on the proportion between the supply and demand, and are not liable to be influenced, or only in a secondary degree, by changes in the cost of production. Antique statues and gems; the pictures of the great masters; wines of a peculiar flavor, produced in small quantities, in particular situations; and a few other articles, exist under what may be called absolute monopolies: their supply cannot be increased, and their price must, therefore, depend entirely on the competition of those who may wish to buy them, without being, in the slightest degree, influenced by the cost of their production. Monopolies are sometimes established by law; as when the power to supply the market with a particular article is made over to one individual, or society of individuals, without any limitation of the price at which it may be sold; which, of course, enables those possessed of the monopoly to exact the highest price for it that the competition of the buyers will afford, though such price may exceed the cost of production in any conceivable degree. The rights conveyed by patents sometimes establish a valuable monopoly; for they enable the inventors of improved methods of production to maintain, during the continuance of the patent, the price of the article at a level which may be much higher than is required to afford them the ordinary rate of profit. This advantage, however, by stimulating invention, and exciting to new discoveries, of which it is the natural and appropriate reward, instead of being injurious, is beneficial to the public. (See *Patents*.) There are also partial monopolies, depending upon situation, connexion, fashion, &c. These, and other inappreciable circumstances, sometimes occasion a difference of thirty per cent. or more, in the price of the same article, in shops not very distant from each other. The effects on prices produced by the opening of new markets, or new sources of supply, and the effect of war in obstructing the ordinary channels of commercial intercourse, and occasioning extreme fluctuations in the supply and price of commodities, are well known. When a tax is laid on a commodity, its price necessarily rises in a corresponding proportion; for otherwise the producers would not obtain the ordinary rate of profit, and would, of course, withdraw from the business. Speculation has also a great influence on prices. It very rarely happens that either the actual supply of any species of produce in extensive demand, or the intensity of that demand, can be exactly measured. Every transaction in which an individual buys produce in order to sell it again, is, in fact, a speculation. The buyer anticipates that the demand for the article he has purchased will be such, at some future period, either more or less distant, that he will be able to dispose of it with a profit; and the success of the speculation depends, it is evident, on the skill with which he has estimated the circumstances that must determine the future price of the commodity. It follows, therefore, that in all highly commercial countries, where merchants are possessed of large capitals, and where they are left to be guided in the use of them by their own discretion and foresight, the prices of commodities will frequently be very much influenced, not merely by the actual occurrence of changes in the accustomed relation of the supply and demand, but by the anticipation of such changes. It is the business of the merchant to acquaint himself with every circumstance affecting the particular description of commodities in which he deals. He endeavors to obtain, by means of an extensive correspondence, the earliest and most authentic information with respect to every thing that may affect their supply or demand, or the cost of their production; and if he learned that the supply of an article has failed, or that, owing to changes of fashion, or to the opening of new channels of commerce, the demand for it has been increased, he would most likely be disposed to become a buyer, in anticipation of profiting by the rise of price, which, under the circumstances of the case, could hardly fail of taking place; or, if he were a holder of the article, he would refuse to part with it, unless for a higher price than he would previously have accepted. If the intelligence received by the merchant had been of a contrary description; if, for example, he had learned that the article was now produced with greater facility, or that there was a falling off in the demand for it, caused by a change of fashion, or by the shutting up of some of the markets to which it had previously been admitted, he would have acted differently: in this case, he would have anticipated a fall of prices, and would either have declined purchasing the article, except at a reduced rate, or have endeavored to get rid of it, supposing him to be a holder, by offering it at a lower price. In consequence of these operations, the prices of commodities, in different places and periods, are brought comparatively near to equality. All abrupt transitions from scarcity to abundance, and from abundance to scarcity, are avoided; an excess in one case is made to balance a deficiency in another, and the supply is distributed with a degree of steadiness and regularity that could hardly have been deemed attainable. The risk to which merchants are exposed, when they either sell off any commodity at a reduced price, in anticipation of a fall, or buy at an advanced price, in anticipation of a future rise, is a consequence principally of the extreme difficulty of ascertaining with accuracy the grounds on which an abundant or a deficient supply, or an increasing or decreasing demand, may be expected. Rules can here be of no service; every thing depends upon the talent, tact and knowledge of the party. Priority, but, above all, accuracy of intelligence, is, in such cases, of the utmost consequence. Without well authenticated data to go upon, every step taken may only lead to error. The instances, indeed, in which speculations, apparently contrived with the greatest judgment, have ended in bankruptcy and ruin, from a deficiency in this essential requisite, are so very numerous that every one must be acquainted with them. When a few leading merchants purchase in anticipation of an advance, or sell in anticipation of a fall, the speculation is often pushed beyond all reasonable limits, by the operations of those who are influenced by imitation only, and who have never, perhaps, reflected for a moment on the grounds on which a variation of price is anticipated. In speculation, as in most other things, one individual derives confidence from another. One purchases or sells, not because he has any really accurate information as to the state of the demand and supply, but because some one else has done so before him. The original impulse is thus rapidly extended; and even those who are satisfied that a speculation, in anticipation of a rise of prices, is unsafe, and that there will be a recoil, not unfrequently adventure, in the expectation that they shall be able to withdraw before the recoil has begun. It may, we believe, speaking generally, be laid down as a sound practical rule, to avoid having any thing to do with a speculation in which many have already engaged. The competition of the speculators seldom fails speedily to render an adventure that might have been originally safe, extremely hazardous. If a commodity happen to be at an unusually reduced price in any particular market, it will rise the moment that different buyers appear in the field; and supposing, on the other hand, that it is bringing an unusually high price, it will fall, perhaps, far below the cost of production, as soon as supplies begin to be poured in by different merchants. Whatever, therefore, may be the success of those who originate a speculation, those who enter into it at an advanced period are almost sure to lose. To have been preceded by others ought not, in such matters, to inspire confidence: on the contrary, it ought, unless there be something special in the case, to induce every considerate person to decline interfering with it. The maintenance of the freedom of intercourse between different countries, and the more general diffusion of sound instruction, seem to be the only means by which those miscalculations, that are often productive of great national as well as private loss, can be either obviated or mitigated. It is superfluous, perhaps, to observe that the precious metals are liable to all the variations of value already alluded to. Not only, therefore, are prices, as was already remarked, affected by variations in the cost and supply of commodities, but also by changes in the cost and supply of gold and silver, whether arising from the exhaustion of old, or the discovery of new mines, improvements in the art of mining, changes of fashion, &c. Hence it is, that tables of the prices of commodities, extending for a considerable period, communicate far less solid information than is generally supposed, and, unless the necessary allowances be made, may lead to the most unfounded conclusions. The real value of any commodity depends on the quantity of labor required for its production; but supposing that we were to set about inferring this real value, or the ultimate sacrifice required to obtain the commodity, from its price, it might happen (had the quantity of labor required for its production declined, but in a less degree than the quantity required to produce gold and silver), that its value would appear to rise when it had really diminished. When, however, the rate of wages, as well as the price of commodities, is given upon authentic data, a table of prices is valuable, inasmuch as it shows the extent of the command over the necessaries and conveniences of life, enjoyed by the bulk of the community, during the period through which it extends. Those desirous of detailed information as to the prices of commodities in Great Britain, in distant times, may consult the elaborate tables in the third volume of sir F. M. Eden's work *On the Poor;* and the fourth volume of Macpherson's *Annals of Commerce.* Arbuthnot's *Tables of Ancient Coins, Weights, Measures, Prices, &c.*, are well known; but the statements are not much to be depended upon. The *Traité de Métrologie* of M. Paucton (4to., Paris, 1780) is the best work on this curious and difficult subject.

Vampire. The vampire bat (*vespertilio spectrum*) is reddish-brown, and about the size of a magpie. It inhabits South America. It has been accused of destroying men and animals by sucking their blood. "But the truth," says Cuvier, in his *Regne Animal*, "appears to be, that it inflicts only small wounds, which may probably become inflammatory and gangrenous from the influence of the climate." It is not altogether improbable that these animals gave origin to the fable of the harpies (q. v.); at least, some ancient authors make mention of these bats. Adelung believes the word *vampire* to be of Servian origin. The belief in blood-sucking spectres, also called *vampires*, is very old. The modern Greeks, according to Tournefort's *Rélation d'un Voyage du Levant* (1st vol., p. 52), call such monsters *broucolacas;* but even the ancient Greeks had their εμπονσαι; and the *lamiæ* and *lemures* of the Romans originated from the same superstition. In 1732, great commotions were caused in Hungary, and particularly in Servia, by the general belief in human vampires, so that investigations were instituted by the government. The common people believed that the bodies of persons who died under sentence of excommunication for sorcery or other crimes, did not decay, but devoured their own flesh, and, during the night, left their graves, and sucked the blood of persons with whom they had been connected, so as to kill them.

Van; a Dutch preposition. (See *Von.*)

Van der Velde, Adrian, William, and Charles. (See *Velde.*)

Van Diemen's Land. (See *Diemen's Land.*)

Van Dyck. (See page 509.)

Van Eyck. (See *Eyck.*)

Van Speyk, John Charles Joseph, born in 1802 or 1803, in Amsterdam, lost his parents early, was educated in an orphan asylum, and learned a mechanic's trade, which he soon quitted to enter the navy. He distinguished himself in the battle at Palembang, and was made a lieutenant. Feb. 5, 1831, he was in command of a gun-boat at the siege of Antwerp. Being driven by the wind up to the city, he was attacked by the Belgians, notwithstanding an armistice then existed. Upon their coming on deck and insulting the Dutch flag, in spite of his repeated warning that he should blow them up, he went below, and was shortly after found, by one of the crew, in the attitude of prayer. He told the man that the crew must take care of themselves, and, after a brief space, fired a pistol into the powder magazine, containing about 1500 pounds of powder, and blew up the vessel. Four of the crew, consisting of thirty-one, were saved: all the rest, with the Belgians, about forty on board, perished. The king of the Netherlands ordered that there should be always a vessel in the Dutch navy bearing the name of *Van Speyk.*

Van Swieten. (See *Swieten, Van.*)

Vanadium; the name of a newly-discovered metal. It was first found in a lead mine at Zimapan, in Mexico, in the year 1801, by Del Rio, who announced it as a new metal, under the name of *erythronium;* but the same mineral having soon afterwards been examined by Collet Descotils, he asserted that erythronium was merely impure chromium. Del Rio himself adopted the opinion of the French chemist, and considered the mineral as a subchromate of lead. In the year 1830, Sefström discovered this substance in a Swedish iron, remarkable for its ductility, obtained from the iron mine of Jaberg, not far from Jönköping, in Sweden. He named it *Vanadium,* from Vanadis, a Scandinavian deity. The finery cinder of the cast iron of Jaberg contains more vanadium than the iron itself, and it exists in it in the condition of vanadic acid. To obtain the metal, the following process is adopted:—The finery cinder is powdered, and mixed with nitre, and carbonate of soda, in the proportions of one part of cinder, one of nitre, and two parts of carbonate: this mixture is strongly calcined for an hour. The soluble portion of the powdered mass is dissolved by boiling water: the solution is filtered, and the excess of alkali saturated with nitric acid, and afterwards precipitated with muriate of barytes, or acetate of lead. The precipitate is vanadate of barytes or lead, containing also some phosphate of barytes or lead, silex, zircon and alumine. While it is still moist, it is to be decomposed by concentrated sulphuric acid: the solution immediately becomes of a deep-red color; and, after having digested the mixture for half an hour, alcohol is added to it, and it is again digested. Ether is then formed, and the vanadic acid is reduced to the state of salifiable oxide, the solution of which is blue; and, when it begins to assume a sirupy consistence, it is mixed, in a platina crucible, with a little fluoric acid, to get rid of the silex; the evaporation is continued over the naked fire, and the sulphuric acid is at last expelled at a red heat. The residue is impure vanadic acid. It is fused with nitre, added in small portions at a time. The vanadic acid combines with the potash, and expels the nitric acid; and nitre is added, until it is found, that, on cooling a small portion of the mass, it ceases to be red. The mass is afterwards dissolved in water, and, after filtration, the residue is slightly washed. A piece of sal-ammoniac, larger than can be dissolved by it, is to be put into the filtered liquid. As this salt dissolves, a white pulverulent precipitate is formed, which is vanadate of ammonia, insoluble in a saturated solution of sal-ammoniac. The vanadate of ammonia ought to be washed, first with a solution of sal-ammoniac, and afterwards, to remove the sal-ammoniac, with alcohol of 0.86. It is to be again dissolved in boiling water, mixed with a little ammonia, filtered, and left to crystallize. It is from this salt that vanadic acid and oxide are afterwards obtained, by heating it gently in open vessels to procure the former, and in close vessels to prepare the latter. In order to obtain the metal, pieces of vanadic acid, which have been previously fused, are to be mixed with pieces of potassium, of equal bulk, in a porcelain crucible; the cover is to be well fastened on, and the crucible is to be heated with a spirit lamp, The reduction occurs almost instantaneously, with a kind of detonation. The crucible, when cold, is to be put into water, to dissolve the potash, and the reduced vanadium is to be collected on a filter: it is obtained in the state of a black powder, which shines in the sun, and takes a grayish metallic lustre under the burnisher; but this is not the true aspect of the metal. Vanadium is white; and, when its surface is polished, it resembles silver considerably, or molybdenum, which, of all metals, it is most like. It is not ductile, and is easily reduced to a powder of an iron-gray color. It is a good conductor of electricity. The powder of vanadium takes fire at a heat below redness, burns without energy, and leaves a black unfused oxide. Vanadium dissolves readily in nitric acid, and in aqua regia: the solution has a fine blue color. The sulphuric, muriatic and fluoric acids do not attack it at all, even when they are concentrated and boiling. It is not oxidized by the alkaline hydrates, and it may be heated with them to redness without undergoing any alteration, if the air be excluded. The compounds of vanadium and oxygen are three in number:—1. *Suboxide of vanadium.* It is obtained by reducing vanadic, by hydrogen gas, at a red heat, or by fusing vanadic acid in a cavity in charcoal. It has not hitherto been combined with other bodies, or with acids or bases. When heated in the air, it takes fire, and burns, leaving an unfused black residue. It is composed of 89.538 parts of metal, and 10.862 of oxygen.—2. *Oxide of vanadium.* It is obtained in a state of purity by mixing 9.5 parts of suboxide with 11.5 parts of vanadic acid, and heating the mixture to whiteness in an atmosphere of carbonic acid gas. It is not fusible at the temperature at which glass softens. It is insoluble in water; but if it remains long in it, the water gradually becomes green in consequence of increased oxidation. It dissolves slowly, but completely, in the acids: the solution is blue, and the oxide acts as a base; but it combines with bases, and forms salts, which may be called *vanadites.* It is composed of 81.056 vanadium, and 18.944 oxygen.—3. *Vanadic acid* is obtained by exposing vanadate of ammonia to a heat near redness, in an open platina crucible, and stirring it occasionally. The vanadate decomposes, becomes at first black, and afterwards, in proportion as it absorbs atmospheric oxygen, of a red-brown color, which, by cooling, becomes gradually pale, and finishes by turning to a rust color. It is tasteless and inodorous: it reddens the color of moistened litmus paper. As soon as it is red hot, it fuses. In this state, it sustains a white heat without losing oxygen, if kept from contact with combustible bodies. When fused, it crystallizes on cooling, and then exhibits a phenomenon which merits observation. It solidifies at a heat which is invisible in day-light; but the moment that solidification commences, a luminous circle extends from the periphery to the centre, where, owing to latent heat, becoming free, the mass remains red hot as long as the crystallization continues. The acid contracts much on solidifying, and is readily detached from the crucible: it is then of a yellowish-red color, and formed entirely of a mass of interlaced crystals. It is not a conductor of electricity. It is slightly soluble in water, to which it imparts a bright yellow color. One thousand parts of boiling water scarcely dissolve one part of acid. The acid is deposited, on evaporation, in the form of red concentric rings. It is easily reduced to the state of an oxide, especially under the influence of an acid. Fused on charcoal by the blow-pipe, it leaves a coherent mass, of the color of plumbago, which is the suboxide: with the phosphate of ammonia and soda, it gives a fine green color to glass, which appears brown while it is hot: with borax, it also gives a green glass. In this reaction, vanadium resembles chromium; but the green color, produced by the former, may be changed to yellow by the oxidating flame, which does not happen with chromium. With carbonate of soda, it is not reduced to the metallic state. It is composed of 74.044 vanadium and 25.955 oxygen. The affinity of vanadium for sulphur is but weak at moderately high temperatures; nevertheless, there are several modes of obtaining sulphurets of vanadium. Hitherto, only two have been formed. The sulphuret consists of 68.02 vanadium and 31.97 sulphur. The supersulphuret is composed of 58.647 vanadium and 41.353 sulphur. When vanadium is heated to redness in an atmosphere of vaporized phosphorus, they do not combine; but when phosphate of vanadium is heated to whiteness in a charcoal crucible, it is reduced, and gives a porous, gray, unfused mass, which may be compressed, and has then the color and lustre of plumbago.—*Alloys of vanadium.* In experiments upon vanadium, the surface of platina crucibles is often alloyed with vanadium, which does not alter either the color or the metallic lustre of the platina; but when it is afterwards heated to redness, the alloyed parts are covered with a layer of fused vanadic acid, which preserves them from further oxidation.—*Salts of vanadium.* The salts which contain oxide of vanadium as a base, are, with few exceptions, of a superb azure-blue color, when in solution. In the solid state, and when combined with water, they are either of a deep or light-blue color, and sometimes greenish. Without water, they are generally brown, and sometimes also green. Both the brown and green salts give blue solutions. Their taste is astringent, and rather sweetish, like those of iron. The greater number of them are soluble in water. The caustic alkalies occasion a precipitate, which is at first of a grayish-white color, and which afterwards becomes of a liver-brown: an excess of alkali dissolves the precipitate, producing a solution of a brown color. Ammonia, added in excess, gives a brown precipitate, and the liquid becomes colorless. The carbonates occasion grayish-white precipitates: sulphureted hydrogen does not render them turbid; but the hydrosulphurets occasion a black precipitate, and, when added in excess, they redissolve it, occasioning a fine purple color: ferro-cyanite of potash occasions a lemon-yellow precipitate, which becomes green in the air. Infusion of galls gives a precipitate of so deep a blue color that it appears black.

Vanbrugh, sir John, a dramatist and architect, descended from a Flemish family, was born in England, about 1672, and entered into the army. But early in life he became a writer for the stage. In 1697, his comedy, the Relapse, was represented; and, in the following year, he produced the Provoked Wife, and Æsop, afterwards altered by Garrick. When Betterton and Congreve obtained a patent for erecting a theatre in the Haymarket, which was opened in 1707, they were joined by Vanbrugh, who wrote for this house his comedy the Confederacy, the most witty as well as the most licentious of his productions, which long kept possession of the stage. The Provoked Husband, or the Journey to London, which he left imperfect at his death, was completed by Colley Cibber. As an architect, Vanbrugh was selected to build the monument to the duke of Marlborough, Blenheim-house; and that structure, as well as castle Howard, affords proof of skill and genius. He obtained, in 1704, the office of Clarencieux king-at-arms; and, in 1714, he received the honor of knighthood. He was also appointed comptroller of the board of works and surveyor of Greenwich hospital. His death occurred March 26, 1726.

Vancouver, George; a modern circumnavigator and captain in the British navy. He served as a midshipman under captain Cook; and a voyage of discovery, to ascertain the existence of any navigable communication between the North Pacific and North Atlantic oceans being determined on, he was appointed to command it. Of this voyage captain Vancouver compiled an account, under the title of Voyage of Discovery to the North Pacific Ocean, and round the World, in the Year 1790—5 (3 vols., 4to.), which was nearly ready for the press when the author died, in 1798.

Vandalia, a post-town of Fayette county, Illinois, is the seat of government for the county and the state. It is pleasantly situated on a high bank of the Kaskaskia, in the centre of a rich and thriving country. Although it has been founded but a very few years, respectable buildings for the accommodation of the government and courts have arisen. A weekly gazette is issued, and the town will soon become a place of extensive business. Lat. 38° 50′ N.; lon. 89° 2′ W.

Vandals; according to some, a Sclavonic tribe, there being a remnant of an ancient race in Hungary, in the county of Eisenburg, still bearing this name, and consisting of 40,000 souls, who speak a very ancient Sclavonic dialect. According to others, the Vandals are considered to be a Germanic tribe, one of those whose migration caused the fall of the Roman empire. Their original country was probably in the north of Germany, between the Elbe and Vistula: the early Roman writers mention them very indistinctly. After the third century of the Christian era, they carried on wars, in connexion with the Burgundians, against the Romans on the Rhine. Under the emperor Aurelian (272), they settled in the western parts of Dacia, or Transylvania, and in part of the present Hungary. When they were driven from these regions by the Goths, Constantine the Great permitted them to settle in Pannonia, on condition that they would assist the Romans in their wars. It was a great mistake of the emperors, when the Roman troops had degenerated, to admit foreigners into their legions, and even to grant them the highest honors. The weakness of the Romans thus became more known to the barbarians; and, in consequence, the latter were more disposed to undertake frequent incursions into the Roman empire. That there were men of talent among the Vandals, is evident from the instance of Stilicho. (q. v.) In the year 406, the Vandals quitted Pannonia, and proceeded, together with the Alans and Suevi, to Gaul, where they committed great devastations: thence they invaded Spain, passing over the Pyrenees, divided with the Suevi the possession of Galicia and Old Castile, and established there an empire, to which the Alans, who had previously settled in Lusitania, but could not withstand the attacks of the Visigoths, submitted (420). Jealousy often gave rise to wars between the Vandals and the Suevi: the former, however, retained their power until they were compelled by the Romans to leave Galicia, and take refuge in Bætica, the coast of the present kingdom of Grenada. The Romans made war against them even here, but were defeated (423); and the Vandals were now emboldened to undertake new enterprises, for which they soon found opportunities. Their king, at that time, was Genseric (Geiserich), a brave, enterprising prince, one of the greatest men of his age, who, however, as he was the cause of devastating wars, and had quitted the Catholic church to join the Arian party, has not been justly represented by historians. Northern Africa was, at that time, subject to the Romans. The governor of this province, Boniface, who thought himself wronged by the emperor Valentinian III, invited the Vandals to Africa, promising to divide the province with them. Genseric embarked with all his people (427), in the ports of Andalusia, and went over to Africa. In the mean time, Boniface, having become reconciled to the emperor, would not perform his promise, and at last attempted to drive away the Vandals by force of arms. But he was conquered. Genseric gradually possessed himself of all that part of Africa which belonged to the Western empire, and there founded a powerful empire, to which he soon added the islands of Sicily, Sardinia, Corsica, Majorca and Minorca. His corsairs were masters of the whole of the Mediterranean, and spread terror on the coasts of Italy. The empress Eudoxia, widow of Valentinian III, who had been compelled by Maximus, the murderer of her husband and usurper of the imperial throne, to marry him, was supposed to have invited the Vandals into Italy from the desire of revenge; but the conduct of Genseric disproves this supposition; for he took the empress and her daughters prisoners. Genseric made his invasion in 455, actuated by love of plunder, and at the head of a powerful fleet. In Rome, no preparation had been made for defence: all fled, and the emperor Maximus was killed in the first confusion. The Vandals plundered Rome during fourteen days, and took possession of all the treasures and works of art which had been left by the Goths. (q. v.) A number of monuments and statues were shipped by them for Africa, together with several thousand of the most distinguished prisoners. On the passage, a ship laden with the finest works of art was lost. Pope Leo met king Genseric at the head of a solemn procession, but could only prevail on him to spare the city from slaughter and conflagration. The savage fury with which the Vandals despoiled the most beautiful works of art, and destroyed the greater part, has given origin to the name of *Vandalism*. Disputes among the descendants of Genseric, in regard to the succession, caused the fall of the Vandal empire. Gelimer, a bold and ambitious general, dethroned the rightful king, Hilderic, a good prince, and had him murdered. Hilderic had been on friendly terms with the emperor Justinian. The latter declared war against Gelimer, under pretence of revenging Hilderic's death, but, in fact, for the purpose of subduing Africa. Justinian's great general, Belisarius, arrived in Africa with only 15,000 men (534), but was victorious over Gelimer in two battles, and forced him to surrender. Gelimer was carried to Constantinople in triumph; and with him the kingdom of the Vandals in Africa was destroyed, after having lasted 106 years.

Vandamme, Dominique, count of Unebourg, born at Cassel, in 1771, was the son of an apothecary. Having entered the service at the beginning of the revolution, he owed a most rapid advancement to an almost unexampled courage. He was at once placed at the head of a light troop, which received the name of the chasseurs of Mont-Cassel, and, in 1792, was with the army of the north, in the quality of general of brigade. In the three succeeding campaigns, he distinguished himself greatly. In 1799, he was appointed general of division, and received the command of the left wing of the army of the Danube. He afterwards passed into Holland, under the orders of general Brune, and contributed much to the happy results of that short campaign. He peculiarly distinguished himself at the passage of the Rhine, and in various memorable days of the campaign of 1800; received several marks of distinction from the first consul, and was named grand officer of the legion of honor. He obtained the decoration of the grand cross of Würtemberg, and commanded the Würtemberg troops in the campaign of 1809, against Austria, distinguishing himself on many occasions. Misunderstandings with Jerome Bonaparte prevented his having any command in the expedition against Russia, in 1812, and he was disgraced, and received an order to retire to Cassel. In February, 1813, however, he was called to the command of a corps of troops. On the 29th of August, he passed the great chain of the mountains of Bohemia, and marched upon Culm, where he found 10,000 Russians, commanded by general Ostermann, lost his artillery, and 6000 of his troops, and was himself taken prisoner. (See *Culm*.) He was marched to Moscow and Wiatka, within twenty leagues of Siberia, and was treated with ungenerous severity. In 1814, he finally placed his foot again on the French territory. In Paris, he received personal insults from various quarters, and, from the minister of war, an order to quit Paris within twenty-four hours, and to retire to Cassel. On the first news of Napoleon's landing, general Vandamme offered his services to the king. They were not accepted, and, after Louis had left Paris, he presented himself before the emperor, who made him a peer of France, and commandant of the second division. He afterwards commanded the third *corps d'armée* under general Grouchy, and obtained signal success at the attack of Wavres, after the battle of Fleurus. His troops were in the actual pursuit of the enemy, when he learnt the defeat of Napoleon at Waterloo. In danger of being crushed by superior numbers, he made good his retreat in perfect order, with his corps almost untouched. General Vandamme occupied Mont-rouge, Meudon, Vanvres and Issy, and a party of the generals made him the offer of the command of the army, which he declined. He afterwards retired behind the Loire. There he mounted the white cockade, and exhorted his troops to submission. The ordonnance of the 17th of January, 1816, having obliged him to quit France, he retired to Ghent, but afterwards resided on his estate at Cassel. He died in 1830.

Vanderwerf. (See *Werf*.)

Vandyck, Anthony, the most celebrated of all portrait painters, was born at Antwerp, in 1598 or 1599. His father was a painter on glass, and his mother was skilled in embroidering landscapes and figures. Henry van Palen was his first instructer. This artist had studied long in Italy, and united good drawing with lively coloring, so that Vandyck acquired from the beginning a good manner, and soon excelled his fellow pupils. Rubens now received him into his school, and intrusted to his execution several large pictures from his own sketches. A battle of the Amazons, and the cartoons for the tapestry containing the history of Decius Mus, obtained him the full confidence and esteem of his master; and he soon became his assistant rather than his scholar. His own inclination, and the jealousy of Rubens, determined him to devote himself exclusively to portrait painting. It has been said that Rubens, from mere jealousy, wished to remove his rival scholar, and advised him to go to Italy; but it is well known that he gave this advice to his most promising pupils in general. He first painted three more pictures, an Ecce Homo, a Christ on the Mount of Olives, and the wife of Rubens, for his instructer; for which Rubens gave him a fine white horse, and sent him to Italy with letters of recommendation. A few miles from Brussels, in the village of Savelthem, the young artist became enamored of a peasant's daughter, so that he remained there a long time, and executed two altar-pieces for the village church. In one of them the object of his love was represented as a Madonna, and in the other, he himself appeared as St. Martin on the horse of Rubens. His residence there becoming known, Rubens used every inducement, by means of the Cav. Nanni, an accomplished Italian, to rekindle the flame of ambition in the bosom of the young man. He succeeded. Vandyck tore himself away, and, accompanied by Nanni, hastened to Italy. He first directed his course to Venice, made Titian and Paul Veronese his models, and acquired their splendor and richness of coloring. His money was spent, and he removed to Genoa, where he painted several portraits, and gained a large sum. He now undertook a journey to Rome, where he was patronised by the cardinal Guido Bentivoglio, whose portrait he painted with the most complete success. This, and the portraits of sir J. Shirley and his lady, residing there, excited so much admiration, that the envy of the other artists compelled him to return to Genoa, where he executed many portraits as well as historical pictures, and always adopted the brilliant style of Titian. He visited Florence, Turin and Sicily, where he resided for some time. But the plague finally drove him out of Sicily; and he finished the celebrated altar-piece for Palermo in Genoa. After his reputation was thus spread throughout Italy, he returned to his own country. Here he painted many historical pictures and altar-pieces. Of the latter, the most renowned are the St. Augustine at Antwerp, and the Crucifixion at Courtray. Rubens is said to have offered him his eldest daughter in marriage; but Vandyck refused her, because his earlier love for her mother (Helena, the second wife of Rubens) was not yet wholly extinguished. He soon after accepted the invitation of the prince of Orange, Frederic of Nassau, to visit his court at the Hague. He painted portraits of this prince, his wife and children, with so much success, that all the principal personages of the court were eager to obtain his services. He then visited London and Paris, but soon returned to Antwerp. A Crucifixion and a Birth of Christ, which he painted for Dendermonde, are among his finest works. Charles I, having seen one of his portraits, immediately ordered him to be invited to return to England. This invitation the painter would have declined but for the urgency of his friend sir K. Digby. On his arrival, he was introduced by him to the king, who put upon his neck a gold chain, with his own miniature, richly set with diamonds, and bestowed upon him the honor of knighthood, a considerable annuity, and a summer and winter residence. Vandyck rewarded this generosity by unceasing diligence: he enriched England with his masterpieces, and executed, besides a multitude of portraits, several mythological and historical paintings. His love of splendor was displayed in the magnificence of his house. His table was frequented by the princes and ladies of the first rank, and his entertainments excelled all others in splendor and luxury. He had also a harem of beautiful women, who supplied him with figures for his historical paintings. In this way he consumed his property, his strength and his health. His lucrative occupation, however, might have repaired the loss of the first, if he had not engaged in the pursuit of the philosopher's stone. The duke of Buckingham endeavored to restore him again to activity, by uniting him in marriage with the beautiful Maria Ruthven, daughter of the Scotch lord Gowry. Vandyck visited his native city with her, and went thence to Paris, where he hoped to be employed to paint the gallery of the Louvre; but, as the work had been already committed to Poussin, he soon returned to England. Though infirm and exhausted, he proposed to the king to paint the walls of the banqueting house with the history and procession of the order of the garter, promising to make the cartoons. Before the work was completed, he was surprised by death, in the forty-second year of his age (1641). He was buried in St. Paul's church. Cowley composed his epitaph. The principal galleries contain some of his pictures. Though Vandyck shone in historical composition, his strength lay in portrait; and no painter ever exceeded him in the knowledge of the *chiaro oscuro*. His choice of nature, when he painted portraits, was always the most agreeable: he gave an inexpressible grace to his heads, and his expression was inimitable. The extremities of his figures are designed in great perfection. His draperies are in a grand style, broad and simple in the folds, easy in the disposition, and the coloring lovely. In some particulars, Vandyck has been acknowledged to be superior to Rubens: his touch is more delicate; his ideas are more graceful; and his expression is more true. During the first six or seven years after his arrival in London, his performances are accounted most excellent; but some of his latter works are painted in such a manner as shows the uncommon rapidity of his pencil, though touched with wonderful spirit: others are comparatively weak, and partake too much of the lead color; yet his penciling is always masterly, and even inimitable. Vandyck sometimes amused himself with engraving, and etched several plates, consisting mostly of portraits, in a spirited style.

Vane, sir Henry, the younger, a conspicuous character in the time of Charles I and the commonwealth, was the son of sir Henry Vane of Hadlow in Kent, and Raby castle in Durham, secretary of state, and treasurer of the household to Charles I, until dismissed for taking part against the earl of Strafford. The subject of this article was born about 1612, and was educated at Westminster school, whence he was removed to Magdalen college, Oxford. He then proceeded to Geneva, from which he returned, much indisposed towards the English liturgy and church government. About this time (1635), several persons, who were uneasy at home on account of their religious opinions, migrated to New England; among whom was Vane. Notwithstanding his youth, he was elected governor of Massachusetts; but, becoming involved in religious disputes, he soon after returned to England, and, with his father's concurrence, married a lady of good fortune, and was appointed a joint treasurer of the navy. He was chosen to represent Hull in the next parliament, yet still kept on such terms with the royal party as to obtain knighthood. The spirit of the times, however, soon led him to take part against the court. He was instrumental in procuring the condemnation of lord Strafford, and he also carried up to the lords the articles of impeachment against archbishop Laud. He likewise acted as one of the parliamentary commissioners at the treaty of Uxbridge, in 1645; and at the negotiations in the isle of Wight, in 1648, was an opposer of the terms of peace. He had, however, no immediate concern in the king's trial or death, but was one of the council of state appointed to supreme power after that event. In 1651, he was appointed a commissioner to be sent into Scotland, in order to introduce the English government there. He continued a strenuous adversary to Cromwell during the whole progress of that leader to sovereignty; on which account the latter found means to imprison him in Carisbrook castle. He even sought to intimidate him by questioning his title to the Raby estate, notwithstanding which, Vane continued inflexible during the whole of the protectorate. After the restoration of the long parliament, he was nominated one of the committee of safety, when he strenuously exerted himself to establish a republican government, until the restoration put an end to all further contest. On this event he had considered himself in no danger; but he was, notwithstanding, arrested and committed to the Tower, as a person whom it was dangerous to allow to be at large. The convention parliament petitioned in favor of him and Lambert, and the king promised that his life should be spared. Charles II violated his word, and sir Henry was brought to trial for high treason. Although accused only for transactions that occurred after the king's death, he was found guilty, notwithstanding a defence of great vigor and ability, in which he pleaded that, if complying with the existing government was a crime, all the nation had been equally criminal. He further observed, that he had, in every change, adhered to the commons as the root of all lawful authority. His trial took place in June, 1662; and on the 14th of the same month, he was beheaded on Tower hill, when he behaved with great composure and resolution. He began to address the people at the scaffold in justification of his conduct, but was interrupted by drums and trumpets. Sir Henry Vane mingled much fanatical speculation with an extraordinary degree of acuteness and general good sense. His enemies scarcely charged him with mercenary views, and his friends regarded him as a mistaken lover of his country. Mackintosh declared him to be one of the most profound minds, not inferior perhaps to Bacon. Sagacious and acute as a statesman, and possessed of almost all the knowledge of his age, he fell a victim to a miserable sophism, and to royal perfidy. The beautiful sonnet addressed to him by his fellow sufferer Milton, is familiar to all. His theological writings display an astonishing power, but are in a high degree mystical, and often unintelligible. Among them are the Retired Man's Meditations (1655); the Face of the Times (1662); and his Meditations on Life, Government, Friendship, Enemies, Death (1662). It must not be forgotten that his history has been written by his enemies.

Vane, or Weathercock; a plate placed on a spindle at the top of a spire, showing, by the way in which it turns, the direction of the wind. In ships, a piece of bunting serves the same purpose.—*Dog-vane;* a small, light vane, formed of thin slips of cork, stuck round with feathers, and strung upon a piece of twine. It is usually fastened to the top of a half-pike, and placed on the weather side of the quarter deck, in order to show the helmsman the direction of the wind, particularly in a dark night, or when the wind is weak.

Vanguard; that part of the army which precedes the main body on the march, as a security against surprise. The strength of the vanguard is in proportion to the strength of the main body; and in a large army, it may be composed of different sorts of troops. The distance of the vanguard from the main body depends partly on the vicinity of the enemy, and partly on the nature of the country. This rule is always to be observed:—The vanguard must remove all little obstructions to the march of the main body, and keep in check the forces of the enemy till the main body is in readiness to meet them. Hence it is the chief duty of the vanguard to discover the enemy in season, and detect them under every concealment. As great activity, both bodily and mental, is requisite for service in the vanguard, it is customary to choose for this purpose the most active troops in the army, and to give them an experienced leader. This captain must know how to conduct skirmishes, and to direct all his movements conformably to the object of the advancing army. The vanguard are often employed in improving the roads, where they are impassable, in procuring provisions, in spreading reports, &c.; and it is always their duty to collect authentic information.

Vanini, Lucilio, or, as he afterwards styled himself, *Julius Cæsar*, a learned Italian of the school of Pomponatius, was born at Tauresano, in the kingdom of Naples, in 1585, and early devoted himself with ardor to letters, studying philosophy, theology, law and astrology at Rome and Padua. He took orders, and began to preach, but soon abandoned his clerical duties for study. He may be considered in some sort as a *polyhistor*; at least he made pretensions to that character. Having travelled in Germany, Bohemia and the Netherlands, he resided some time at Geneva and Lyons, where he occupied himself with instruction, but was finally obliged to flee to England, and in that country was thrown into prison. Wherever he had appeared, he had become obnoxious to suspicions, on account of his peculiar religious views. Returning to Lyons, after his release from prison, he published his *Amphitheatrum Æternæ Providentiæ*(1615), which appears to have been directed against Cardan (q. v.) and others of his way of thinking, but which drew upon Vanini himself the suspicion of atheistical notions, and compelled him to quit Lyons. Retiring to Paris, he here published his *De admirandis Naturæ, Reginæ, Deæque Mortalium Arcanis* (1616), in sixty dialogues, which is more of a physical than a theological treatise. Although published with the permission of the theological faculty of Sorbonne, it subjected Vanini anew to the charge of atheism. In 1617, he went to Toulouse, where he was accused of atheism and sorcery, and condemned to the flames. He was drawn to the place of execution, and, after his tongue had been torn out, was strangled and burnt, at the age of thirty-four years. His death has given Vanini more celebrity than his writings would have procured him. His punishment was entirely undeserved, as there is no ground for the accusation brought against him; but he appears to have created enemies by his imprudent conduct, his vanity, and his satirical spirit. Voltaire and Bayle have defended him; and a German work, Vanini's Life and Fate, Spirit, Character and Opinions (Leipsic, 1800), contains an account of what has been written for and against him.

Vanloo; the name of a distinguished family of artists, which originated in Ecluse, in Flanders. Two members of this family have contributed most to its fame. They were the sons of Louis Vanloo, known as a fresco painter.—The eldest of the two, *John Baptist*, born at Aix, in 1684, a portrait and historical painter, lived in France, Italy and England. He died in 1745. His historical paintings are chiefly in Paris, Toulon, Turin, Rome and London.—The second, *Charles Andrew* was born at Nizza, in 1705, painted landscapes and historical subjects, became, in 1735, a member of the academy of arts in Paris, and died in 1765. His pictures have mostly remained in France.—John Baptist had four sons, who all became skilful artists, though the two youngest, Claudius and Francis, died young; the eldest, Charles Andrew Philip, became painter to the court of Berlin, and Louis Michael to the king of Spain.

Vannucchi; the proper name of Andrea del Sarto. (See *Sarto*.)

Vansittart, Nicholas, lord Bexley, born in 1766, is the youngest son of Henry Vansittart, governor of Bengal, and was educated at Christ-church, Oxford. He afterwards studied the law, and was called to the bar in 1792. In 1796, he was elected member of parliament for Hastings, in Sussex, and in the next parliament sat for Old Sarum. Mr. Vansittart spoke occasionally in the house, and made himself known to the public by several pamphlets, which he published at that period:—Reflections on the Propriety of an immediate Peace (1793); Letters to Mr. Pitt on the Conduct of the Bank Directors (1795); and an Inquiry into the State of the Finances of Great Britain (1796). In February, 1801, he was sent on a special mission to Copenhagen, and in April he was made secretary to the treasury. In 1805, he resigned that place, and was appointed chief secretary of Ireland, which place also he gave up in the same year. In 1806, under lord Grenville's administration, he was again appointed secretary to the treasury, and was elected member of parliament for Helstone, in Cornwall, and quitted place when the Grenville administration went out. In 1811, he published Two Speeches on the Report of the Bullion Committee. On the assassination of Mr. Percival, Mr. Vansittart was made choice of by lord Liverpool to be his chancellor of the exchequer, in which office he continued till 1823, when he was succeeded by Mr. Robinson (see *Goderich*), and created chancellor of the duchy of Lancaster, with a peerage. He retained this post under Canning and Goderich, but, in 1828, gave way to the Wellington ministry.

Vanucci. (See *Perugino.*)

Vapor. (See *Evaporation.*)

Vapor Bath. The vapor or steam bath may be regarded as a modification of the hot bath; but its effects are much less violent. The most usual mode of employing it is to expose the naked body in a room, into which the steam of hot water may be admitted. This room is generally heated to a temperature considerably above that of the atmosphere, and the body is suffered to remain for some time in this heated air, the common effect of which is, to increase its temperature, and to accelerate the circulation of the blood. After some time, the steam is admitted, when the former symptoms are removed, and a profuse perspiration is produced. This is usually promoted by friction, and removal to a warm bed. The general effect of this process is to relax the body, remove obstructions of the skin, alleviate pain and spasmodic contractions, and promote sleep. In the vapor bath, the stimulant power of heat is modified and tempered by the moisture diffused through the air; and, as the elastic vapor, like air, is a less powerful conductor of heat than a watery fluid, the effect of vapor in raising the temperature of the body is much less than that of the hot bath. Its heating effect is also further diminished by the copious perspiration that ensues; so that, on all accounts, the vapor bath is safer, and, in most cases, more effectual, than the hot water bath. (See *Bath.*)

Vapors. (See *Hysterics.*)

Var. (See *Departments.*)

Varangians, or Varagians (i. e. *hunters*, or *corsairs*); a Scandinavian race, who seem to have received this name in Russia, where they established several principalities. Some of them afterwards entered the service of the Byzantine emperors, and performed the duty of imperial guards at Constantinople. Here they were recruited, according to the Byzantine writers, by bands of their countrymen from Thule; i. e. by Saxons and Danes, who fled from England to escape the Norman yoke. They continued to speak the Saxon or Danish language till the overthrow of the empire. The peculiar weapon of these Varangian guards, to whom the keys of the palace and the capital were entrusted, was the two-edged battle-axe.

Varchi, Benedetto, an eminent man of letters, born at Florence, in 1502, was educated at the university of Padua, where he made a great progress in the belles-lettres, but was designed for the law, which he studied during the life of his father, and was even admitted a notary. When the decease of his parents left him at liberty to pursue his own inclinations, he forsook the law, and devoted himself entirely to literature. He accordingly studied the Greek language and philosophy, until driven from Florence by his attachment to the Strozzi: he then returned to Padua, where he read public lectures on morals and literature. The grand duke of Tuscany, Cosmo I, invited him back to Florence, although he had opposed the Medici, and assigned to him the office of writing a history of the late revolution. Whilst thus employed, he was attacked, at night, by some persons who feared that his strictures might be unfavorable to them, and stabbed in several places. He, however, recovered, and had either the prudence or the lenity not to name the parties, although he knew them. He was carried off by an apoplexy, in 1565, at the age of sixty-three. Varchi was a man of indefatigable industry, and there is scarcely a branch of literature which he did not cultivate. His *Storia Fiorentina*, comprising only the period of eleven years, is very voluminous, and written in a diffuse, languid manner. It is also charged with adulation to the house of Medici. Varchi likewise wrote poems and a comedy, and, as a grammarian, obtained reputation by his dialogue entitled *L'Ercolano*, on the Tuscan language. His *Lezioni lette nella Academia Fiorentina* display a multifarious erudition.

Varennes; a petty town in the north-east of France, one hundred and fifty miles north-east of Paris, and eighteen north-west of Verdun. It has about 1300 inhabitants, with manufactures of leather and paper; but is chiefly remarkable as the place where Louis XVI was stopped in his imprudent flight from Paris, in June, 1791. (See *Louis XVI.*)

Variable Quantities, in geometry and analytics, denote such as are either continually increasing or diminishing, in opposition to those which are constant, remaining always the same. Thus the abscisses and ordinates of an ellipsis, or other curve line, are variable quantities, because they vary or change their magnitudes together. Some quantities may be variable by themselves alone, while those connected with them are constant; as the abscisses of a parallelogram, whose ordinates may be considered as all equal, and therefore constant. The diameter of a circle, and the parameter of a conic section, are constant, while their abscisses are variable. Variable quantities are usually denoted by the last letters of the alphabet, z, y, x, while the constant ones are denoted by the first letters, a, b, c.

Variation, in music, is the different manner of singing or playing the same air, tune or song, either by subdividing the notes into several others of less value, or by adding graces, in such a manner, however, that the tune itself may still be discovered, through all its embellishments. These repetitions or variations were formerly called *doubles*. Mozart's variations for the piano, and those of Rode for the violin, are particularly excellent. Generally speaking, variations are more suited to instrumental than vocal music. The latter sort are chiefly intended for practice, or to show the splendid talents of the singer; e. g. those sung by madame Catalani. (q. v.) There are also variations in poetry, called *glosses*, used in Spanish and Portuguese poetry. (See *Gloss*.)

Variation of Curvature, in geometry, is used for that inequality or change which happens in the curvature of all curves except the circle; and this variation, or inequality, constitutes the quality of the curvature of any line.

Variation of the Magnetic Needle. (See *Magnetism*.)

Variations, Calculus of; that branch of the differential calculus (see *Calculus*) in which the mathematician ascends from the theory of the *maximum* and *minimum* to the more important and difficult investigation of that curve, or those, among all possible curves, to which belong certain given qualities in the highest or lowest degree. If, for instance, the question is, to find the brachystochrones (i. e. those among all curves of equal length, which a body, moved by given powers, passes through in the shortest time), the analytical answer to this and similar questions leads to the calculus of variations, which, therefore, appears as an extended theory of the *maximum* and *minimum*, and, instead of confining itself to differentiation, rather requires us to deduce from a derived equation already found the primitive one possessing the required quality. The method of variations, which owes its origin to John Bernoulli's proposing the above-mentioned problem of the brachystochrones, in 1693, crowns the admirable fabric of modern geometry. —See Dicksen's *Analytische Darstellung der Variationsrechnung* (Berlin, 1826, 4to.).

Variations of the Moon; inequalities in the revolution of the moon, known only since the time of Tycho Brahe.

Variety, in natural history, a subdivision of a species, as a species is a subdivision of a genus. What one naturalist considers a variety, another sometimes considers a distinct species. Most of the various kinds of dogs are varieties which can be reduced to a few species. A variety cannot be preserved without much care: left to nature, it returns, in a succession of generations, to the species.

Variorum, cum Notis. Certain editions of ancient and modern Latin and Greek authors, published mostly in Holland, in the seventeenth and eighteen centuries, and containing the notes of many commentators, are termed *editiones cum notis variorum*. These editions do not stand in very high estimation with scholars, but are, nevertheless, sought for by collectors. The number is given differently by bibliographers, accordingly as they enumerate more or fewer new editions of this kind published out of Holland.

Various Readings (*lectiones variantes*, *lectiones variæ*) are differences in the text of a work, which sometimes originate from the ignorance or negligence of the early transcribers of manuscripts, sometimes from the changes which an author makes himself in the later editions of his works. To restore the true text of ancient works is the business of verbal criticism, and is often very important; e. g. in classic authors, the Bible, &c. Some editions contain all the various readings in notes.

Varna; a town of European Turkey, in Bulgaria; one hundred and twelve miles north-east of Adrianople, and one hundred and forty-four north of Constantinople; lon. 27° 59′ E.; lat. 43° 7′ N.; population, 16,000. It has an old castle, twelve mosques, two Greek churches, the most commodious port in Bulgaria, and a large trade with Constantinople. It is situated on a gulf or bay of the Black sea, to which it gives name, at the mouth of the river Varna. In 1444, Ladislaus, king of Hungary, was defeated and slain by Amurath I, sultan of the Turks, near this town. In 1783, *Varna* resisted the attacks of the Russians; but, Oct. 11, 1828, it was taken possession of by the Russian forces. (See *Russia*.)

Varnish. Lac varnishes, or lacquers, consist of different resins in a state of solution, of which the most common are mastich, sandarach, lac, benzoin, copal, amber, and asphaltum. The menstrua are either expressed or essential oils or alcohol. For a varnish of the first kind, the common painters' varnish is to be united, by gently boiling it, with some more mastich or colophony, and then diluted with a little more oil of turpentine. The latter addition promotes both the glossy appearance and drying of the varnish. Of this sort also is the amber varnish. To make this varnish, half a pound of amber is kept over a gentle fire, in a covered iron pot, in the lid of which there is a small hole, till it is observed to become soft, and to be melted together into one mass. As soon as this is perceived, the vessel is taken from the fire, and suffered to cool a little, when a pound of good painters' varnish is added to it, and the whole suffered to boil up again over the fire, keeping it continually stirring. After this, it is again removed from the fire, and, when it is become somewhat cool, a pound of oil of turpentine is to be gradually mixed with it. Should the varnish, when it is cool, happen to be yet too thick, it may be attenuated with more oil of turpentine. This varnish has always a dark-brown color, because the amber is previously half-burned in the operation; but, if it be required of a bright color, amber powder must be dissolved in transparent painters' varnish, in Papin's machine, by a gentle fire. As an instance of the second sort of lac varnishes with ethereal oils alone, may be adduced the varnish made with oil of turpentine. For making this, mastich alone is dissolved in oil of turpentine by a very gentle, digesting heat, in close glass vessels. This is the varnish used for the modern transparencies, employed as window-blinds, fire-screens, and for other purposes. These are commonly prints, colored on both sides, and afterwards coated with this varnish on those parts that are intended to be transparent. Sometimes fine thin calico, or Irish linen, is used for this purpose; but it requires to be primed with a solution of isinglass before the color is laid on. Copal may be dissolved in genuine Chio turpentine, by adding it in powder to the turpentine, previously melted, and stirring till the whole is fused. Oil of turpentine may then be added to dilute it sufficiently. A varnish of the consistence of thin turpentine is obtained by the digestion of one part of elastic gum, or caoutchouc, cut into small pieces, in thirty-two parts of naphtha. Previously to its being used, however, it must be passed through a linen cloth, in order that the undissolved parts may be left behind. The third sort of varnishes consists of the spirit varnishes. The most solid resins by themselves produce brittle varnishes; therefore something of a softer substance must always be mixed with them, whereby this brittleness is diminished. For this purpose, elemi, turpentine, or balsam of copaiva, are employed in proper proportions. For the solution of these bodies, the strongest alcohol ought to be used. In conformity to these rules, a fine-colored varnish may be obtained by dissolving eight ounces of gum sandarach and two ounces of Venice turpentine in thirty-two ounces of alcohol by a gentle heat. Five ounces of shell-lac, and one of turpentine, dissolved in thirty-two ounces of alcohol, by a very gentle heat, give a harder varnish, but of a reddish cast. To these the solution of copal is undoubtedly preferable in many respects. This is effected by triturating an ounce of powdered gum copal, which has been well dried by a gentle heat, with a drachm of camphor, and, while these are mixing together, adding, by degrees, four ounces of the strongest alcohol, without any digestion. Between this and the gold varnish there is only this difference, that some substances that communicate a yellow tinge are to be added to the latter. Take two ounces of shell-lac, of annotto, and turmeric, of each one ounce, and thirty grains of fine dragon's blood, and make an extract with twenty ounces of alcohol, in a gentle heat. Oil varnishes are commonly mixed immediately with the colors; but lac or lacquer varnishes are laid on by themselves upon a burnished colored ground. When they are intended to be laid upon naked wood, a ground should be first given them of strong size, either alone or with some earthy color, mixed up with it by levigation. The gold lacquer is simply rubbed over brass, tin or silver, to give them a gold color. Before a resin is dissolved in a fixed oil, it is necessary to render the oil drying. For this purpose, the oil is boiled with metallic oxides, in which operation, the mucilage of the oil combines with the metal, while the oil itself unites with the oxygen of the oxide. To accelerate the drying of this varnish, it is necessary to add oil of turpentine. The essential varnishes consist of a solution of resin in oil of turpentine. The varnish being applied, the essential oil flies off, and leaves the resin. This is used only for paintings. When resins are dissolved in alcohol, the varnish dries very speedily, and is subject to crack; but this fault is corrected by adding a small quantity of turpentine to the mixture, which renders it brighter, and less brittle when dry. The colored resins or gums, such as gamboge, dragon's blood, &c., are used to color varnishes. To give lustre to the varnish after it is laid on, it is rubbed with pounded pumice-stone and water, which being dried with a cloth, the work is afterwards rubbed with an oiled rag and tripoli. The surface is, last of all, cleaned with soft linen cloths, cleared of all greasiness with powder of starch, and rubbed bright with the palm of the hand. The following receipt for a good spirit varnish is given by Tingry:—Take strong alcohol, thirty-two parts; pure mastich, four; sandarach, three; clear Venice turpentine, three; coarsely ground glass, four. Reduce the mastich and the sandarach to fine powder; introduce them, with the glass and spirit, into a matrass, which is to be placed in hot water for one or two hours, taking care to stir up the materials from time to time with a glass spatula; then pour in the turpentine, and keep the vessel for half an hour longer in the water. Next day decant off the liquor, and filter it through cotton. It will be perfectly limpid. This varnish is usually applied to objects of the toilet, as work-boxes, card-cases, &c.—*Essence varnish*, by the same; Take mastich in powder, twelve parts; pure turpentine, one and a half; camphor in bits, one half; crystal glass, ground, five; rectified oil of turpentine, thirty-six. Put the mastich, camphor, glass and oil into a matrass, and dissolve as above prescribed. This varnish is applied to paintings.—*Fat varnish*. Take copal, sixteen parts; linseed or poppy oil, made drying with litharge, eight; oil of turpentine, sixteen. Melt the copal in a matrass, by exposing it to a moderate heat; pour then upon it the boiling hot oil; stir the mixture, and, when the temperature has fallen to about 200° Fahr., add the oil of turpentine heated. Strain the whole immediately through linen cloth, and keep the varnish in a wide-mouthed bottle. It becomes very clear in a little while, and is almost colorless when well made. Copal varnish is applied on coaches, also generally on polished iron, brass, copper and wood.—*Varnish*, among medallists, is the term used to signify those hues which antique medals have acquired by lying in the earth. The beauty which nature alone is able to impart to medals, and which art has never yet attained the power of counterfeiting, enhances their value. The colors acquired by certain metals, from having lain a long while in the ground, are various, and some of them exquisitely beautiful. The blue nearly rivals that of the turquoise: others have an inimitable vermilion color; others, again, a polished, shining brown. But that most usually found is a delicate green, which hangs to the finest strokes without effacing them. No metal except brass is susceptible of this. The green rust which gathers on silver always spoils it, and must be removed with vinegar or lemon juice. Falsifiers of medals have a varnish which they use on their counterfeits, to give them the appearance of being antique; but there are means of discovering these deceptions. (See *Numismatics*.)

Varro, Marcus Terentius, one of the most learned men and prolific writers of ancient Rome, born B. C. 116, served, in his youth, in the army, and, at a later period, obtained the dignity of tribune, with other public offices. Varro was the intimate friend of Cicero, and was banished by Antony, but returned to Rome under Augustus, and died there, at the age of eighty-nine years, with the reputation of being the most learned Roman, or at least the most learned critic, of his time. The number of his writings, chiefly on language, history and philosophy, is stated to have amounted to about 500, of which only two have come down to us—a treatise upon agriculture (*De Re Rustica*), in three books, which is contained in the collection *Scriptores Rei Rusticæ*, and fragments of a treatise on the Latin language (*De Lingua Latina*), which treats principally of etymology and analogy. Good editions of the latter have appeared at Dort, in 1619 (2 vols.), and (by Sprengel) at Berlin, in 1826. The former has been translated into English by Owen (1800).

Varus, Quintilius. (See *Arminius*.)

Vasa, Gustavus. (See *Gustavus I.*)

Vasari, Giorgio, the first writer who gave a complete history of all modern artists, and also himself a practical artist, was born at Arezzo, in the grand duchy of Tuscany, in 1512, and studied under Luca Signorelli, Michael Angelo Buonarotti, and Andrea del Sarto. The cardinal Ippolito de' Medici, pope Clement VII, and the dukes Alessandro and Cosmo, successively engaged him in their service, after which he determined not to enter again into the service of any prince. He was, however, employed by the succeeding dukes, by the popes, and other eminent persons, as an architect and painter, in both of which characters, particularly in the former, he obtained great reputation, although as a painter he was only a skilful imitator of Michael Angelo. His principal paintings are a Lord's Supper, in the cathedral of Arezzo, and several works in the Palazzo Vecchio, in Florence, and in the Vatican in Rome. He has himself given us an account of his different works in Florence, Arezzo, Pisa, Venice, Bologna, Rome, &c. His *Vite de' più eccellenti Pittori, Scultori ed Architetti* (first printed in 1550, and often republished) is of more interest to us. It is highly esteemed, both on account of the facts which it contains, and for the scattered remarks in regard to the progress of the arts. It, however, has fallen into many errors respecting the earlier masters—a circumstance owing to the imperfection of existing accounts; and it is also guilty of partiality towards the Tuscan artists. We have also some other productions from the pen of Vasari, who died in 1574.

VASCO DA GAMA. (See *Gama.*)

VASE (*vas*, Latin). The Grecian artists gave to every vase, or other utensil, the shape best adapted to its use, and most agreeable to the eye. Sometimes they took the parallelopipedon; in other instances, a shape either circular or slightly curved, to prevent the eye from being intercepted by angles or corners. These shapes admitted, at the same time, of greater variety, notwithstanding which, its primitive character was always perceived. It was only in times subsequent to the decline of the arts that these simple contours were departed from, and the pyramidal or angular figure substituted. Very rich and precious substances were employed by those who could afford such profusion. Vases were frequently set up as prizes in the public games. A great number of these vessels have been preserved to the present day, and offer to artists models of the most beautiful forms. Of all the works in this department of Grecian art which have come down to our times, there are none so richly meriting attention as the ancient vases in terra-cotta, so long and universally, but improperly, designated as *Etruscan*, from the circumstance of their original describers (Montfaucon, Dempster, Gori, Passeri, Caylus and D'Ancarville) having regarded them as monuments of Etruscan art. But the fact is, that the greater number of these vases are not found in Etruria. It is to the sepulchres of Nola, of Capua, of Santa Agatha, &c., as well as to different cities of Græcia Magna, that we are indebted for the largest and finest collections. The Athenian tombs have also furnished many; and Mr. Hamilton is correct in designating them, as he has done in one of his prefaces, emphatically *Grecian.* The tombs or sepulchres in which these exquisite vases were commonly found, were situated near the walls of towns, ordinarily built of brick or rough stone, and of just sufficient size to admit the body, with some five or six vases standing round it, or hung on the walls by nails of bronze. The number, size and beauty of these vases varied, doubtless, according to the rank of the party inhumed. The paintings of these ancient Greek vases are extremely interesting, on account of the subjects represented, and of the beauty of the workmanship. The subjects most frequently to be found are sacrifices, processions and representations which bear relation to the mysteries of Bacchus or Ceres. There are, occasionally, but not so often, exhibitions of family feasts or of public games. Sometimes, also, the mythics of the heroic ages are introduced. They did not serve as receptacles of the ashes, but the most probable opinion is, that they were sacred vases which had been given to those who were initiated into the mysteries of Bacchus and Ceres, and were employed at the festivals of these divinities. Most of the subjects represented have reference to these mysteries. Some of these vessels may have been distributed on other solemn occasions. While the possessors were alive, it is probable that they were placed in the halls or vestibules of their houses, and, after their owners' death, they accompanied them to the tomb. In Lower Italy, the art of imitating them is carried to great perfection, as many an unfortunate purchaser has found. Large collections of these vases are contained in Naples (briefly but instructively described by Andrew di Gorio—*R. Museo Borbonico, Galleria dei Vasi*, Naples, 1825), in London and Paris, in Vienna, Petersburg, &c.—See the *Introduction à l'Étude des Vases Antiques*, by Dubois-Maisonneuve (Paris, 1817, folio), and the small treatise *Dei Vasi Grechi, delle lor Forma e*

Dipintura, e dei Nomi e Uso loro in Generale (Palermo, 1823, 4to.). The celebrated W. Tischbein published, in 1791, at Naples, a splendid work, containing drawings of such vases. See also Lanzi's *De' Vasi antichi dipinti volgarmente chiamati Etruschi* (Florence, 1806). (For the Portland or Barberini vase, see the article *Portland Vase.*)

Vassal (*homo fidelis, vassus*, feoffee); a person who has bound himself to fidelity and service towards another, especially in war, for which he receives the promise of protection and the enjoyment of an estate, a rent, office, privilege (out of which, in the later period of the feudal system, a real *dominium utile* originated). The origin of the word is not certain. It is not probable that it is derived from the Gaelic *gwas*: it is more probable that it comes from the Arabico-Spanish of the tenth century, the expression *guazil* (servant) having been in common use in the Moorish dominions in Spain, which then possessed a higher civilization than the rest of Europe. The vassal of the king had again his vassals, and the more powerful of these again theirs; hence, in Italy, the degrees of *capitanei, valvasi, valvasini*. A vassal who was bound to serve his lord against every one else in war, was called *vassus ligius*. (See *Feudal System*, and *Villenage*.)

Vater, John Severin, a philologist and theologian, was born at Altenburg, in Saxony, in 1771, and studied at the gymnasium of his native city. In 1789, he went to the university of Jena. Griesbach and Paulus were his chief teachers in theology. From 1792 to 1794, he studied in Halle. In 1795, he received permission to lecture, in consequence of his works on Aristotle's Rhetoric and Philosophy. In 1795, he lectured at Jena, and was soon appointed *professor extraordinarius*. His chief study was general grammar and Hebrew grammar, in the latter of which he has done much for the better understanding of the nouns, by the preparation of complete paradigms. In 1799, he was invited to Halle, as ordinary professor of Oriental literature and theology, and soon after published his Inquiries into the Mosaic Writings and into Ecclesiastical History. In 1807, he undertook the continuation of the Mithridates, after the death of Adelung (q. v.), and collected, for several years, materials for general philology. In 1809, he went to Königsberg as professor and librarian. His philological studies embraced even the African and American languages. For his improvements in Russian grammar, particularly in regard to the structure of the verbs, he received the order of Wladimir. No one has written so many grammars as he. In 1820, he resumed his former professorship in Halle. Since that time, he has written on ecclesiastical history, the exegesis of the New Testament, and the present state of theology. Towards the end of his life, he was also the editor of the Journal for Preachers, and of the Archives of Ecclesiastical History, as well as the founder and editor of the Annals of Domestic Devotion. In the midst of these labors, he died of consumption, in 1826.

Vathek Billah. (See *Caliph*, vol. ii, page 410.)

Vatican; the most extensive palace of modern Rome, built upon the Vatican hill, from which it has received its name. Immense treasures are stored up in it. It is not a regular building, but contains twenty-two court-yards, and, as is generally said, 11,000 rooms. Several popes have labored on this edifice, which was not completed until the time of Sixtus V, who died in 1590. Here are the celebrated collections of pictures, and the museums, in which all the periods of the arts have deposited many of their most perfect productions. Here are the *stanze* (q. v.) of Raphael; here are the Sistine (q. v.) and Pauline chapels, the *museo Chiaramonti*, and the *museo Pio-Clementino*, the *appartamento Borgia*, the *stanza dei Papiri* (collection of papyrus rolls); here is the rich Vatican library (described below); here are pictures of almost all the first masters of that glorious period of which Raphael is the chief ornament; and near it is the gigantic St. Peter's. The Vatican is connected with the Belvedere (q. v.) and the castle of St. Angelo. In the Vatican, the conclaves (q. v.) are held for the elections of popes. As the popes formerly resided here, the word *Vatican* was, and still is, not unfrequently used for the papal government, as the cabinet of St. James or Berlin is used for the English or Prussian government.

Vatican Library. In the finest place that could be found for a library, this precious collection is deposited, which bears witness to the scientific spirit, or fondness for magnificence, of many successive popes. Lofty and spacious rooms, adorned with fresco paintings, antique vases, and two beautiful statues, contain the simple cases in which the manuscripts are preserved. The history of this collection, which has justly been called a *panoplia*, reaches back to the times of Constantine the Great, if we can believe the somewhat legendary account of Assemanni, in the catalogue of this library (*Bibl. Apost. Vat. Codd. Mss. Catalogus, etc.*; Rome, 1756). Nicholas V increased the collection so much that he may be almost considered its second founder. Sixtus V highly embellished the exterior of the edifice, and prepared the great saloon in which a large part of the library is now preserved. Leo X. devoted himself to Greek; Pius IV, to Oriental manuscripts; Pius V united the archives, which are still inaccessible, with the library; and Paul V and Urban VIII enlarged the accommodations, the present of the library of Heidelberg (q. v.) having made greater space necessary. Clement VII added the manuscripts of the library of Urbino; Alexander VIII, 1900, left by the queen Christina of Sweden; Benedict XIII, those of Ottoboni; not to mention other acquisitions and embellishments. The most recent is the library of count Cicognara. Yet this invaluable treasure of manuscripts and old printed works (the absence of modern works is to be regretted) is rendered less useful by a want of order, and even of catalogues, which do not exist, or are denied to the student. The above-mentioned catalogue of Assemanni embraces but a very small part of the collection, and is a rarity in the library itself, as most of the copies of it were burnt in 1786. For the other parts of the library, there are only written catalogues; and these are badly drawn up; and the use of them is considered a favor. Moreover, the ancient and not very liberal rules of Clement XIII and Innocent XIII are still enforced, and are doubly oppressive on account of the many holydays. Many complaints of modern travellers, among whom are some of the most distinguished men of the age, show that the present superintendent, Maio, enforces the laws in all their rigor, though he has shown, if it were necessary, what treasures are contained in the library, by his *Scriptor. Veter. nova Collectio e Codd. Vaticanis edita* (Rome, 1825, 4to.).

Vattel, or Wattel, Emer de, an eminent publicist, son of a clergyman of Neufchatel, was born in 1714. After completing his studies, he went to Berlin, and subsequently to Dresden, where he was appointed privy counsellor to the elector. He died at Neufchatel, in 1767, in the fifty-third year of his age. He owed his early literary reputation to his Defence of the Philosophy of Leibnitz against De Crousaz (1741), and *Pièces diverses de Morale et d'Amusement* (Paris, 1746). His great work was published at Neufchatel, under the title of *Droits des Gens, ou Principes de la Loi naturelle* (1758). It was translated into most modern languages; into English, under the title of the Law of Nations, or Principles of the Law of Nature, applied to the Conduct and Affairs of Nations and Sovereigns (1760, 4to., and 1793, 8vo.). In general, Vattel takes the celebrated Wolf for his guide, but differed from him in some points, in relation to which he published, in 1762, *Questions sur le Droit naturel.*

Vauban, Sebastian le Prestre, seigneur de, marshal of France, and the greatest engineer which that country has produced, descended of an ancient and noble family of Nivernois, was born 1633, and early entered the army, where his uncommon talents and genius for fortification soon became known, and were signally displayed in various successive sieges. He rose to the highest military rank by his merit and services, and was made governor of the citadel of Lisle, in 1668, and commissioner-general of fortifications in 1678. He took Luxemburg in 1684, and was present, in 1688, at the siege and capture of Philipsburg, Manheim and Frankendal, under the dauphin. He was made marshal of France in 1703, and died at Paris, 1707, aged seventy-four. As an engineer, he carried the art of fortifying, attacking and defending towns to a degree of perfection unknown before his time. He fortified above three hundred ancient citadels, erected thirty-three new ones, had the principal management and direction of fifty-three sieges, and was present at a hundred and forty-three engagements. His works consist of a treatise entitled *La Dixme Royale* (1704, 4to. and 12mo.), and a vast collection of manuscripts, in twelve volumes, which he calls *Mes Oisivetés*, containing his ideas, reflections and projects for the advantage of France. The following works have also been published either under his name or from his ideas: *Manière de fortifier par M. de Vauban, mise en Ordre par le Chevalier de Cambrai* (1689 and 1692); *L'Ingénieur Français* (by Herbert); *De l'Attaque et de la Défense des Places, suivant le Système de M. Vauban* (1736); *Sur la Fortification, par M. de Vauban* (1746).

Vaublanc-Viennot, Vincent Marie, count de, born in 1756, entered the army on leaving the military school, and, in 1791, was appointed deputy to the legislative assembly, where he became a distinguished advocate of the royal cause; censured, vehemently, the despotism of the municipalities, and spoke in favor of the clergy who had refused to take the oaths. He was appointed president of the assembly, and opposed the motion to sequester the property of emigrants, without exempting women or children. His speech on this subject was received with cries of abuse, and even with menaces. The powers assumed by the popular clubs were arraigned by him, and he obtained a decree of accusation against Marat. He was not elected a member of the convention, and, though proscribed, he had the good fortune to escape the guillotine. At the time of the movement of the sections of Paris against the convention, he was president of the section Poissonière, and, on the 17th of October, was condemned to death for contumacy. Two days before his condemnation, he was chosen deputy for the department of the Seine and the Marne to the council of five hundred. The sentence of condemnation against him was annulled; and on the second of September, 1796, he mounted the tribune to take the oath of hatred to royalty. On the 18th Fructidor, he was proscribed, and condemned to be sent out of France; but he escaped into Italy, whence he was recalled after the 18th of Brumaire. In 1800, the conservative senate proclaimed him a member of the legislative body. In 1805, he was raised to the dignity of count, and commandant of the legion of honor, and appointed prefect of the Moselle. On the restoration, he was named minister of the interior, and displayed extraordinary activity and talent. During his administration, the institute received its new organization. M. de Vaublanc was succeeded in the home department by M. Lainé, and, on this occasion, was named minister of state and member of the privy council. He was afterwards chosen member of the chamber of deputies, in which, as in the ministry, he deserted his former liberal principles.

Vaucanson, Jacques, a French mechanician, born at Lyons, died at Paris in 1782, has acquired celebrity by his ingenious automata. These are a brazen duck, which performs all the motions of a living duck, swallows the food put before it, and passes it in a regular manner; a Provençal piper, and a flute-player. The last mentioned is a figure as large as life, seated upon a pedestal, which contains bellows, by means of which wind is driven to different parts of the machine in such a manner as to move the lips and fingers of the statue. Vaucanson exhibited this automaton at Paris in 1738, and explained the mechanism of it in a pamphlet—*Le Mécanisme du Fluteur Automate, par Vaucanson* (Paris, 1738). Vaucanson was afterwards appointed by cardinal Fleury inspector of the silk manufactures, and introduced some improvements in the throwing mills.

Vaucluse (*vallis clausa*); a small village, six leagues east of Avignon (q. v.), in France. This small place gives its name to a department. (See *Departments*.) Near Vaucluse, the river Sorgue rises between rocks, falls as it comes out of the rocks, and, after having formed several beautiful cascades, runs about ten miles through a romantic country, and enters the Rhone near Avignon. Here Petrarch lived; and through him Vaucluse and the source of the Sorgue have become famous.

Vaud, Pays de. (See *Pays de Vaud*.)

Vaudeville; a species of light French songs, consisting of several couplets (strophes) of a gay and sometimes satirical character. A *vaudeville* should have an easy and pleasing tune, and the chief idea of the whole should be repeated with proper variations at the end of each strophe. The little dramatic pieces interspersed with witty songs adapted to well-known popular tunes, &c., and which are performed at the *théâtre du Vaudeville*, opened in 1791, are called *comédies-vaudeville*, and conclude with a *vaudeville*, of which each performer sings one strophe, having reference to the part performed by him. Opinions are divided respecting the origin of the word. The Dictionary of the academy derives it from *Vau de Vire*, a valley in Normandy. In the little town of *Vau-de-Vire*, Olivier Basselin, a Norman poet of the fourteenth century, is said to have satirized the follies of the day in spirited songs. This *Vau de Vire*, published as early as 1576, and republished in 1821, by Louis Dubois (*Vaux de toutes les Villes*), is believed to have given rise to the name *vaudeville*. It has also been derived from *Vau-de-ville*, a song which runs through the whole town, from mouth to mouth.

Vaudois. (See *Waldenses*.)

Vaudoncourt, William de, born at Vienna, of French parents, in 1772, was educated in Berlin, and, on the breaking out of the revolution, entered the French army as lieutenant of volunteers, in 1791. After serving with distinction during several campaigns, he was appointed, by general Bonaparte, major of artillery (1797), in the army of the Cisalpine republic. In 1803 and 1804, he superintended the erection of arsenals and public manufactories of arms for the republic; in 1805, assumed the supervision of the artillery school at Pavia, and, at the same time, served under Masséna as commander of the Italian artillery, and director-general of the French park. In 1807, he was sent to Ali Pacha to organize his forces, and to conduct the operations against the Russians in Corfu, Sta. Maura, and the gulf of Lepanto. In 1809, he was made general, and served under Eugene in the campaign of 1812, when he was made prisoner. During the hundred days, Vaudoncourt commanded the national guards of Metz, and, after the restoration, being obliged to leave France, retired to Munich. In 1821, eager to contribute to the independence of Italy, in the service of which he had spent eighteen years, he went to Piedmont, and was appointed commander-in-chief of the constitutional forces; but, on the failure of the enterprise (see *Piedmontese Revolution*), he retired to Spain, and occupied himself with literary pursuits. The French invasion of 1823 obliged him to quit that country; and, withdrawing to England, he was finally permitted to return to France in 1825. Among his works are *Histoire des Campagnes d'Annibal en Italie* (3 vols., 4to., Milan, 1812); *Mémoires pour servir à l'Histoire de la Campagne de Russie en* 1812; *Histoire des Campagnes d'Italie en* 1813 *et* 1814; *Histoire de la Guerre des Français en Allemagne en* 1813; Letters on the internal political Condition of Spain from 1821 to 1823 (London, 1824); *Histoire des Campagnes de* 1814 *et* 1815 *en France* (5 vols., Paris, 1826); and *Histoire Politique et Militaire du Prince Eugène* (3 vols.).—

Vault. (See *Architecture.*)

Vaulting; one of the finest gymnastic exercises, which much strengthens the arms, abdominal muscles, dorsal muscles and lower extremities, and imparts more grace than any other gymnastic exercise.

Vauquelin, Nicholas Louis, an eminent French chemist, member of the institute and of numerous learned societies, was born in Normandy, in 1763. In 1780, he went to Paris to continue the study of chemistry and pharmacy, which he had begun at Rouen, and, three years after, was engaged by Fourcroy as his assistant in his chemical preparations. Vauquelin soon became the friend and rival of his master, with whom he continued to be connected for eight years. In 1793, he became a member of the academy of sciences, which, with other learned societies, was soon after abolished. At this time, he went to Melun, where he was attached to the military hospital, but was recalled to Paris the next year, and appointed inspector of the mines. His lectures on the art of assaying, delivered by order of the government at the mining academy in Cleves, procured him the place of adjunct professor of chemistry at the polytechnic school. When the institute was founded, he was admitted a member; and he was also among the first to receive the cross of the legion of honor. Being appointed professor of chemistry to the college of France on the death of Darcet, he resigned his place of inspector of the mines, and assumed the superintendence of the newly-erected school of pharmacy. On the death of Brogniart, he was appointed, at the nomination of the institute and of the inspectors of studies, to the professorship of chemistry at the *Jardin des Plantes*. In 1811, he succeeded Fourcroy as professor of chemistry to the faculty of medicine, all the other candidates having voluntarily withdrawn their pretensions in his favor. In 1822, with Jussieu, Dubois, Lallement and others guilty of holding liberal opinions, he was dismissed from his place. His only separate publication is the *Manuel de l'Essayeur* (1812); but he is the author of many valuable papers in the *Annales de Chimie*, the *Journal des Mines*, the *Annales du Muséum*, &c. He died in 1829.

Vauquelinite. This mineral occurs in extremely minute crystals, which appear to have the form of the regular six-sided prism; fracture uneven; surfaces of the crystals a little curved; lustre adamantine, often faint; color blackish-green, olive-green; streak siskin-green, often inclining to brown; faintly translucent to opaque; rather brittle; hardness inferior to calcareous spar; specific gravity 5.5. Besides occurring in crystals, it is found botryoidal, reniform and massive: composition generally impalpable; surface drusy or rough; fracture imperfect and flat conchoidal. Alone before the blow-pipe, it intumesces a little, and then froths and melts into a grayish globule, giving, at the same time, some globules of lead. According to Berzelius, it consists of

Oxide of lead,	60.87
Oxide of copper,	10.80
Chromic acid,	28.33

It occurs at Berezof, in Siberia, along with chromate of lead; and is also said to exist in Brazil.

Vaux, Nicholas, first lord Vaux, was the son of sir William Vaux, and received the honor of knighthood for his gallantry at the battle of Stoke, in 1487. He ranked high in the favor of Henry VIII, who carried him with him into France, where he was present at the celebrated meeting between that king and the French monarch in the "field of cloth of gold," and was afterwards ennobled. His death took place in 1530.—His son, *Thomas lord Vaux*, who inherited the talents and valor of his father, and succeeded him in the esteem of his prince, was born in 1510. He attended Henry on his second French expedition, and was made governor of Jersey, with the collar of the order of the Bath. Like many of the young nobility of the age, he joined the cultivation of poetry to the study of martial exercises; and several of his poetic effusions are yet to be found in the Paradyse of daintie Devyces, of which his Aged Lover's Renunciation of Love, and the Assault of Cupid, have been much admired. His death took place soon after the accession of Mary to the throne.

Vauxhall Gardens. This elegant place of summer resort is situated near the Thames, in the parish of Lambeth, about a mile and a half from Westminster bridge, and is denominated from the manor of Vauxhall. There is no certain account of the time when these premises were first opened for the entertainment of the public; but the Spring gardens at Vauxhall are mentioned in the Spectator as a place of great resort. It was formerly little more than a tea-garden, enlivened with instrumental music, but so much frequented, that the proprietor was encouraged to augment the attraction by the introduction of vocal music. These gardens are beautiful and extensive, and contain a variety of walks: when open for public amusement, they are illuminated with variegated lamps, and embellished with transparent devices. The different boxes and apartments are adorned with paintings, many of which are executed by Hogarth and Hayman. The latter has chosen his subjects from Shakspeare. In bad weather, the musical performance is in the rotunda, seventy feet in diameter. The roof is so contrived, that sounds never vibrate under it; and thus music is heard to great advantage.

Vector, or **Radius Vector**, in astronomy, is a line supposed to be drawn from any planet moving round a centre, or the focus of an ellipse, to that centre, or focus. It is so called, because it is that line by which the planet seems to be carried round its centre, and with which it describes areas proportional to the times.

Vedas. (See *Indian Literature*, vol. vi, page 563.)

Vedette; a sentinel on horseback. The word is derived from the Italian *vedetta* (from *vedere*, to see), and signifies, originally, a watch-tower. It is also used, sometimes, for sentinels on foot, forming the extreme point in the line of outposts. They are often placed in pairs, in such a way that the field of vision of one intersects that of the other.

Veering. (See *Ship.*)

Vega (Spanish for *valley*); the name of numerous places in countries where the Spanish language is spoken.

Vega. Don Lope Felix de Vega Carpio, generally called Lope de Vega, is described under *Lope de Vega.* (See also *Garcilaso.*)

Vega, George, baron de, an Austrian officer of artillery, born at Sagoritz, in Carniola, in 1754. He studied at the college of Laybach, where he made a rapid progress in mathematics. Being appointed an engineer in Carniola, and afterwards in Hungary, he became known as a man of talent in his profession, and was patronised by the emperor Joseph II. He served in several campaigns against the French, and, having distinguished himself on many occasions, especially in 1796, was made a major, and afterwards a lieutenant-colonel, knight of the order of Maria Theresa, and a baron of the empire. His death took place in September, 1802. He was a member of the academies of Göttingen, Erfurt, Berlin, and several others, and was considered as a distinguished mathematician. He published a Course of Mathematics for the Use of the Artillery of the Imperial Army (Vienna, 1786—1800, 4 vols., 4to.; 3d edit., 1802, folio); a Logarithmo-trigonometrical Manual (Leipsic, 1793, 4to.); a Complete Collection of grand Logarithmo-trigonometrical Tables (1794, folio); an Introduction to Chronology (Vienna, 1801, 8vo.); and a Natural System of Measures, Weights and Coins (1803, 4to.).

Vegetable Chemistry. The principles of which vegetables are composed, if we pursue their analysis as far as our means have hitherto allowed, are chiefly carbon, hydrogen and oxygen. Nitrogen is a constituent principle of several, but it is only present in small quantity. Potash, soda, lime, magnesia, silex, alumine, sulphur, phosphorus, iron, manganese and muriatic acid occur occasionally in plants, though in small and very variable proportions. Every distinct compound which exists already formed in plants, and which is capable of separation without suffering decomposition, is called a *proximate*, or *immediate principle*, of vegetables. Thus sugar, starch and gum are proximate principles. Opium, though obtained from a plant, is not a proximate principle, but consists of several proximate principles, mixed more or less intimately together. The proximate principles of vegetables are sometimes distributed over the whole plant, while in others they are confined to a particular part. The methods by which they are procured are very variable. Thus gum exudes spontaneously, and the saccharine juice of the maple-tree is obtained by incisions made in the bark. In some cases, a particular principle is mixed with such a variety of others, that a distinct process is required for its separation. Of such processes consists the *proximate analysis* of vegetables. Sometimes a substance is separated by mechanical means, as in the preparation of starch. On other occasions, advantage is taken of the volatility of a compound, or of its solubility in some particular menstruum. Whatever method is employed, it should be of such a nature as to occasion no change in the composition of the body to be prepared. The reduction of the proximate principles into their simplest parts constitutes their *ultimate analysis*. By this means the quantity of oxygen, carbon and hydrogen present in any compound is ascertained. The method by which this is accomplished is, to convert the whole of the carbon into carbonic acid, and the hydrogen into water, by means of some compound which contains oxygen in so loose a state of combination as to give it up to those elements at a red heat. The substance employed is the peroxide of copper, which, if alone, may be heated to whiteness without parting with oxygen; whereas it yields oxygen readily to any combustible matter with which it is ignited. It is easy, therefore, by weighing it before and after analysis, to discover the precise quantity of oxygen which has entered into union with the carbon and hydrogen of the substance submitted to examination. The constitution of vegetable substances is not yet sufficiently known to admit of their being classified in a purely scientific order. The chief data hitherto furnished towards forming a systematic arrangement, are derived from a remarkable agreement between the composition and general properties of several vegetable compounds. From the ultimate analysis of a considerable variety of proximate principles the three following conclusions are drawn: 1. a vegetable substance is always acid when it contains more than a sufficient quantity of oxygen for converting all its hydrogen into water; 2. it is always resinous, oily or alcoholic, &c., when it contains less than a sufficient quantity of oxygen for combining with the hydrogen; and 3. it is neither acid nor resinous, but in a state analogous to sugar, gum, starch, or the woody fibre, when the oxygen and hydrogen which it contains are in the exact proportion for forming water. These laws, indeed, are not rigidly exact, nor do they include the vegetable products containing nitrogen. M. Thénard has divided the proximate principles into five classes. The first includes the vegetable acids; the second, vegetable alkalies; the third, those substances which contain an excess of hydrogen; the fourth, those the oxygen and hydrogen of which are in proportion for forming water; and the fifth, those bodies which, so far as is known, do not belong to either of the other divisions.—1. The *vegetable acids* are decomposed by a red heat. They are, in general, less liable to spontaneous decomposition than other vegetable substances. They are nearly all decomposed by concentrated hot nitric acid, by which they are converted into carbonic acid and water. They are at least twenty-five in number, the most important of which are the following: acetic acid, or vinegar (q. v.), oxalic (q. v.), tartaric (q. v.), citric (q. v.), malic, benzoic (q. v.), gallic (q. v.) boletic, moroxylic (q. v.), meconic and pectic acids.—2. Under the title of *vegetable alkalies* are comprehended those proximate principles which are possessed of alkaline properties. They all consist of carbon, hydrogen, oxygen and nitrogen. They are decomposed with facility by nitric acid and by heat; and ammonia is always one of the products of the destructive distillation. They never exist in an insulated state in the plants which contain them, but are, apparently, in every case, combined with an acid, with which they form a salt more or less soluble in water. These alkalies are, for the most part, very insoluble in water, and of sparing solubility in cold alcohol; but they are all readily dissolved by that fluid at a boiling temperature, being deposited from the solution, commonly in the form of crystals, on cooling. Most of the salts are far more soluble in water than the alkalies themselves, and several of them are remarkable for their solubility. As the vegetable alkalies agree in several of their leading chemical properties, the mode of preparing one of them admits of being applied, with slight variation, to all. The general method is as follows: The substance containing the alkaline principle is digested, or, more commonly, macerated, in a large quantity of water, which dissolves the salt, the base of which is the vegetable alkali. On adding some more powerful salifiable base, such as potassa or ammonia, or boiling the solution for a few moments with lime or pure magnesia, the vegetable alkali is separated from its acid; and being, in that state, insoluble in water, may be collected on a filter, and washed. To purify it from certain oleaginous, resinous substances and coloring matters, it is mixed with a little animal charcoal and dissolved in boiling alcohol. This solution is filtered while hot, and evaporated to dryness, which affords the alkali in a state of perfect purity. Upwards of twenty of these bodies have already been investigated. The following are the names of those which are the most important: morphia, cinchonia, quinia, strychnia, brucia, veratria and sanguinaria. (q. v.)—3. *Oils* are characterized by a peculiar unctuous feel, by inflammability, and by insolubility in water. They are divided into fixed and volatile oils, the former of which are comparatively fixed in the fire, and therefore impart a permanent stain to paper; while the latter, owing to their volatility, produce a stain which disappears by gentle heat. (See *Oils*, and *Essential Oils*.)—4. *Resins* are the inspissated juices of plants, and commonly occur either pure or in combination with an essential oil. They are solid at common temperatures, brittle, inodorous and insipid. They are non-conductors of electricity, and, when rubbed, become negatively electric. They are generally of a yellow color and semi-transparent. They are melted by the application of heat, and, by a still higher temperature, are decomposed. In close vessels, they yield empyreumatic oil, and a large quantity of carbureted hydrogen. In the open air, they burn with a yellow flame and much smoke, being resolved into carbonic acid and water. Resins are dissolved by alcohol, ether and the essential oils; and the alcoholic and ethereal solutions are precipitated by water, a fluid in which they are quite insoluble. Their best solvent is pure potash and soda; and they are soluble in the alkaline carbonates by the aid of heat. The product is, in each case, a soapy compound, which is decomposed by an acid. The most important are described under their respective names, in this work. *Alcohol* (q. v.) is the intoxicating ingredient of all spirituous and vinous liquors. It does not exist ready formed in plants, but is a product of the vinous fermentation. (See *Fermentation*.) *Ether* (q. v.) is a general term applied to several compounds produced from the action of acids on alcohol.—4. Those substances in which the oxygen and hydrogen are in the exact proportion for forming water, are *sugar*, *starch*, *gum* and *lignin*, all of which have been described, except the last. Lignin forms the fibrous structure of vegetable substances, and is the most abundant principle in plants. The different kinds of wood contain about 96 per cent. of lignin. It is prepared by digesting the sawings of any kind of wood successively in alcohol, water and dilute muriatic acid, until all the substances soluble in these menstrua are removed. It has neither taste nor odor, undergoes no change by keeping, and is insoluble in alcohol, water and the dilute acids. When the woody fibre is heated in close vessels, it yields a large quantity of impure acetic acid and charcoal. It consists of carbon 51.43, oxygen 42.73, and hydrogen 5.82.—5. *Substances not belonging to either of the preceding sections.* The most important of these are coloring matter, tannin, vegetable albumen, gluten, yeast, asparagin, caffein, cathartin, piperin, bitter principle, and extractive matter.

The Chemical Phenomena of Germination and Vegetation. Germination is the process by which a new plant originates from seed. A seed consists essentially of two parts—the *germ* of the future plant, endowed with a principle of vitality, and the cotyledons, or seed-lobes, both of which are enveloped in a common covering of cuticle. In the germ, two parts—the radicle and the plumule—may be distinguished, the former of which is destined to descend into the earth and constitute the root, the latter to rise into the air and form the stem of the plant. The office of the seed-lobes is to afford nourishment to the young plant, until its organization is so far advanced, that it may draw materials for its growth from extraneous sources. For this reason, seeds are composed of highly nutritious ingredients. The chief constituent of most of them is starch, in addition to which they frequently contain gluten, gum, vegetable albumen or curd, and sugar. The conditions necessary to germination are three-fold, viz. moisture, a certain temperature, and the presence of oxygen gas. The necessity of moisture to this process has been proved by extensive observation. A certain degree of warmth is not less essential. Germination cannot take place at 32° Fahr.; and a strong heat, such as that of boiling water, prevents it altogether, by depriving the germ of the vital principle. The most favorable temperature ranges from 60° to 80°, the precise degree varying with the nature of the plant—a circumstance that accounts for the difference in the season of the year at which different seeds begin to germinate. The presence of air is indispensable for the germination of seeds; but the influence of light, which is so favorable to all the subsequent stages of vegetation, is injurious to the process of germination. The operation of malting barley, in which the grain is made to germinate by exposure to warmth, air and humidity, affords the best means of studying the phenomena of germination. In preparing malt, the grain passes through four stages, called *steeping*, *couching*, *flooring* and *kiln-drying*. In the first, it is steeped in water for about two days, when it absorbs moisture, softens, and swells considerably. It is then removed to the couch frame, where it is laid in heaps, thirty inches in depth, from twenty-six to thirty hours. In this situation, the grain becomes warm, and acquires a disposition to germinate; but as the temperature, in such large heaps, would rise very unequally, and germination consequently be rapid in some portions and slow in others, the process of flooring is employed. This consists in laying the grain in strata a few inches thick, on large, airy, but shaded floors, where it remains for about twelve or fourteen days, until germination has advanced to the extent desired by the maltster. During this interval, the grain is frequently turned, in order that the temperature of the whole mass may be uniform. As soon as saccharine matter is freely developed, germination must be arrested; since, otherwise, being taken up as nutriment for the young plant, it would speedily disappear. Accordingly, the grain is removed to the kiln, where it is exposed to a temperature gradually rising from 100° to 160°, or rather higher; the object being first to dry the grain completely, and then to provide against any recurrence of germination, by destroying the vitality of the plant. The difference between malted and unmalted barley is readily perceived by the taste; but it will be more correctly appreciated by inspecting the result of a comparative analysis of the two.

	In 100 of Barley.	In 100 of Malt.
Resin,	1	1
Gum,	4	15
Sugar,	5	15
Gluten,	3	1
Starch,	32	56
Hordein,	55	12

It hence appears, that, during germination, the hordein is converted into starch, gum and sugar; so that, from an insoluble material, which could not, in that state, be applied to the uses of the young plant, two soluble and highly nutritious principles result, which, by being dissolved in water, are readily absorbed by the radicle. In the *growth of plants*, a striking analogy to that of animals is noticeable. The root serves the purpose of a stomach, by imbibing nutritious juices from the soil, and thus supplying the plant with materials for its growth. The sap, or circulating fluid, composed of water, holding in solution saline, extractive, mucilaginous, saccharine, and other substances, rises upwards through the wood in a distinct system of tubes, called the common vessels, which correspond in their office to the lacteals and pulmonary arteries of animals, and are distributed in minute ramifications over the surface of the leaves. In its passage through this organ, which may be termed the lungs of plants, the sap is fully exposed to the agency of light and air, experiences a change, by which it is more fully adapted to the wants of the vegetable economy, and then descends through the inner layer of the bark in another system of tubes, called the proper vessels, yielding, in its course, all the juices and principles peculiar to the plant. Plants absorb carbonic acid from the air, under certain circumstances, and emit oxygen in return. When a healthy plant, the roots of which are supplied with proper nourishment, is exposed to the direct solar beams in a given quantity of atmospheric air, the carbonic acid, after a certain interval, is removed, and an equal volume of oxygen is substituted for it. If a fresh portion of carbonic acid is supplied, the same result will ensue. But this change only takes place in the sunshine: in the dark, an opposite effect takes place; oxygen disappears, and carbonic acid is evolved. In the dark, therefore, vegetables deteriorate rather than purify the air, producing the same effect as the respiration of animals. Plants appear to derive a large proportion of their carbon from the carbonic acid of the atmosphere. Light is necessary to the color of plants. The green color of the leaves is not developed, except when they are in a situation to absorb carbonic acid, and give out oxygen. With respect to the food of plants, the chief source from which plants derive the materials for their growth, is the soil. However various the composition of the soil, it consists, essentially, of two parts, so far as its solid constituents are concerned. One is a certain quantity of earthy matters, such as siliceous earth, clay, lime, and sometimes magnesia; and the other is formed from the remains of animal and vegetable substances, which, when mixed with the former, constitute common mould. A mixture of this kind, moistened by rain, affords the proper nourishment of plants. The water, percolating through the mould, dissolves the soluble salts with which it comes in contact, together with the gaseous, extractive, and other matters, which are formed during the decomposition of the animal and vegetable remains. In this state it is readily absorbed by the roots, and conveyed as sap to the leaves, where it undergoes a process of assimilation. But, though this is the natural process by which plants obtain the greater part of their nourishment, and without which they do not arrive at perfect maturity, they may live, grow, and even increase in weight, when wholly deprived of nutrition from this source. Thus it is well known, that many plants grow when merely suspended in the air. Without water, plants speedily wither and die. It gives the soft parts that degree of succulence necessary for the performance of their functions; it affords two elements, oxygen and hydrogen, which, either as water, or under some other form, are contained in all vegetable products; and lastly, the roots absorb from the soil those substances only which are dissolved or suspended in water. So carefully, indeed, has nature provided against the chance of deficient moisture, that the leaves are endowed with a property both of absorbing aqueous vapor directly from the atmosphere, and of lowering their temperature during the night by radiation, so as to cause a deposition of dew upon their surface, in consequence of which, during the driest seasons, and in the warmest climates, they frequently continue to convey this fluid to the plant, when it can no longer be obtained in sufficient quantity from the soil. But, necessary as is this fluid to vegetable life, it cannot yield to plants a principle which it does not possess. The carbonaceous matter which accumulates in plants, under the circumstances above alluded to, may with certainty be attributed to the atmosphere, since we know that carbonic acid exists there, and that growing vegetables have the property of taking carbon from that gas. When plants are incinerated, their ashes are found to contain saline and earthy matters, the elements of which, if not the compounds themselves, are supposed to be derived from the soil. Such, at least, is the view deducible from accurate researches and from chemical principles. Some later experiments, however, would seem to lead to a different conclusion. Several kinds of grain, such as barley, wheat, rye and oats, in pure flowers of sulphur, were supplied with nothing but air, light, and distilled water; on incinerating the plants thus treated, they yielded a greater quantity of saline and earthy matters than were originally present in the seeds. These results may be accounted for in two ways. It may be supposed, in the first place, that the foreign matters were introduced accidentally from extraneous sources, as by fine particles of dust floating in the atmosphere; or, secondly, it may be conceived, that they were derived from the sulphur, air and water, with which the plants were supplied. If the latter opinion be adopted, we must infer either that the vital principle, which certainly controls chemical affinity in a surprising manner, and directs this power in the production of new compounds from elementary bodies, may likewise convert one element into another; or that some of the substances supposed by chemists to be simple, such as oxygen and hydrogen, are compounds, not of two, but of a variety, of different principles. But as these conjectures are at variance with the facts and principles of chemistry, it would appear that some error must have been committed in the experiments. (For an account of the spontaneous changes to which vegetables are liable, see the article on *Fermentation;* see also the article *Plants.*)

Vegetables. (See *Plants.*)

Vegetation. The wide extension of vegetable life furnishes one of the most striking examples of the productive power of nature. Every climate has its peculiar vegetation. The coldest countries are not entirely destitute of it, and it has been thought by naturalists that even perpetual snow is the abode of some species of vegetables. Saussure discovered in it a reddish dust, and the navigators in the arctic regions frequently observed in it a red coloring matter, supposed to belong to the order *algæ.* The absence of light does not altogether prevent vegetable existence. Caverns and mines produce certain plants, principally those of the cryptogamous class. Vast fields of marine plants spring from the depths of the ocean, especially towards and within the tropics. The vine-leaved fucus vegetates at the depth of two hundred feet. The surface of the Atlantic, in some parts, is covered with masses of floating fuci, which are supposed by botanists to grow at the bottom of the sea, and to be torn off when ripe by the motion of the waters. Extreme heat is not destructive of vegetation, provided it be accompanied by humidity. Plants grow not only on the borders, but even in the waters, of hot springs. The greatest obstacle to vegetation is the absence of moisture. Those sandy tracts where rain seldom or never falls, and where the soil is constantly shifted about by the winds, exhibit a complete sterility. The chemical nature of the soil influences the size and vigor of plants, rather than sets limits to their cultivation: common salt, however, dissolved and scattered over the earth, almost entirely prevents their growth. The scale of atmospherical heat is what ordinarily determines the character and progress of vegetation. In the torrid zone, therefore, it is only necessary to ascend mountains to a certain height, to find the trees, fruits and flowers of the temperate zone, and, still higher, those of the frigid zone. (See *Mountains*, and *Temperature.*) The vegetation which covers the sides of mountains, thus forms distinct zones or bands, each having its peculiar vegetable tribes. On the volcano of Teneriffe, for example, five of these zones have been distinguished: 1. the region of vines; 2. of laurels; 3. of pines; 4. of the alpine broom; and, 5. of grasses. In the equinoctial regions, where the seasons differ little in respect of heat, the geographical distribution of plants is regulated almost entirely by the mean temperature of the whole year; but, in the temperate zone, this distribution depends more upon the mean temperature of the summer season. Some plants only require a certain degree of heat for a short period, while for others a more moderate heat is sufficient, if of longer duration. Thus the birch does not put forth leaves under a temperature of 53° or 54°; but the pine requires a long rather than a warm summer. In Lapland, therefore, where the summer, though short, is warm, the birch rises nearer the line of perpetual congelation than the pine; but in the Alps and other high chains in low latitudes, where the summer is longer, but colder, the pine is seen after the birch has disappeared.

The frigid zone contains but few species of plants; yet of these the vegetation in summer is extremely rapid. The verdure of countries within the polar circle is confined chiefly to southern aspects, and the trees are of diminutive growth. Besides mosses and lichens, there exist ferns, creeping plants, and some shrubs yielding berries. In the high latitudes of the northern temperate zone are the pine and the fir, which show their adaptation to a cold climate, by retaining their verdure through the rigors of winter. Advancing southward, we meet successively the oak, the elm, the beech, the lime, and other forest trees. Several fruit-trees, amongst which are the apple, the pear, the cherry, and the plum, grow better in the northern half of this zone; while to its more southern parts especially belong the more delicate fruits, such as the olive, the lemon, the orange and the fig, and, amongst trees, the cedar, the cypress and the cork. The space comprised between the thirtieth and the fiftieth parallels of latitude may be considered as the country of the vine and the mulberry. Wheat extends as far north as the sixtieth degree; oats and barley a few degrees farther. In the southern part of this zone, maize and rice are more commonly cultivated. The vegetation of the torrid zone is characterized by a wealth, variety and magnificence no where to be found in the other regions of the globe. Under the beams of a tropical sun, the most juicy fruits and the most powerful aromatics arrive at perfection: the ground there yields the sugar-cane, the coffee-tree, the palm, the bread-tree, the pisang, the baobab, the date, the cocoa, the vanilla, the cinnamon, the nutmeg, the pepper, the camphor-tree, &c. The cow-tree of South America yields vegetable milk. There are also various sorts of dye-wood, and several species of corn, peculiar to hot climates; while the elevated tracts of these regions produce the plants of the temperate countries. The vegetable forms near the equator are in general more majestic, and their coloring more brilliant, than in higher latitudes. The largest trees are adorned with flowers, larger, more beautiful, and more odoriferous, than those of herbaceous plants in our zone.

The distribution of plants cannot be explained solely by the influence of climate, or by the distribution of temperature; for it frequently happens, that similar climates are found in different parts of the globe, without identity of production. The climate of the high mountains of the torrid zone is analogous to that of the temperate zone; yet Humboldt did not discover one indigenous rose-tree in all South America; and this shrub is entirely wanting in the southern hemisphere. The genus *erica* (heath) is peculiar to the old world, not one of the 137 species known being found in the new. On the other hand, the *cactus* (Indian fig) is confined to the new world. According to Humboldt, the species of plants at present known amount to 44,000. Of these, 6000 are cryptogamous. The remaining 38,000 phanerogamous plants are thus distributed: In Europe, 7000; temperate regions of Asia, 1500; tropical and insular regions of Asia, 4500; Africa, 3000; temperate regions of America, 4000; tropical regions of America, 13,000; Pacific islands, 5000. A remarkable circumstance in the distribution of plants is the extreme rarity of the social plants (that is, those which, like the heath, live together, and cover large tracts of land) between the tropics, where they are found only on the sea shore and upon elevated plains. Among the vegetable forms, there are some which become more common from the equator towards the poles, as the ferns, the heaths, and the rhododendrons; others, on the contrary, increase from the poles towards the equator, as the *rubiaceæ*, the *euphorbiæ*, and the leguminous plants; while others, such as the *cruciferæ*, the *umbelliferæ*, &c., are most abundant in the temperate zone, and diminish in number towards the poles and the equator. Such constant relations prevail in respect of vegetable forms, that when, upon any point of the globe, we know the number of species belonging to one of the great families, both the whole number of phanerogamous plants, and the number of species composing the other vegetable families, may be estimated with considerable accuracy. It has been a question much discussed among philosophers, in what way the various vegetable tribes were originally diffused over the surface of the earth; and three different hypotheses have been proposed. Linnæus supposed a single primitive centre of vegetation, whence all species of plants have been gradually dispersed over the globe by winds, rivers, currents, animals, &c. A second hypothesis is, that each species of plants originated in a primitive centre, of which there were several in different parts of the globe, each being the seat of a particular number of species. The third hypothesis is, that, wherever a suitable climate existed, there the vegetable tribes sprang up, and that plants of the same species were, from the first, spread over different regions.

Vegetius Renatus, Flavius, the most celebrated of the Roman writers on the military art, flourished towards the end of the fourth century, in the reign of the emperor Valentinian II. He is supposed to have been an inhabitant of Constantinople, but nothing certain is known of his history. The work of Vegetius *De Re Militari* is to be found in various editions of the *Veteres de Re Militari Scriptores*; and it has been often printed separately. Among the best editions are those of Schwebel (Nuremberg, 1767, 4to.; and Strasburg, 1806, 8vo.).—*Publius Vegetius*, who, notwithstanding the difference of prænomen, has been confounded with the military tactician, was a writer on farriery. His work, entitled *Artis Veterinariæ sive Mulo-medicinæ*, lib. iv., was first printed at Basle in 1528; but the best edition is that of J. M. Gesner (Manheim, 1781, 8vo.). This treatise is likewise included in the *Scriptores Rei Rusticæ*.

Vehme. (See *Fem.*)

Veii, on the river Cremera, one of the twelve Etrurian cities, which were under the government of their own *lucumones*, early became involved in hostilities with the inhabitants of the neighboring Rome, which was of a more recent origin. A post near Cremera, which the Fabii were employed to defend, was intended to check the attacks of the inhabitants of Veii. A war was the consequence, in which the Fabii were defeated; but the Romans were afterwards victorious, at the moment when they intended to retreat. The siege of Veii ensued (349—358 A. U. C., or 396 B. C.), and lasted ten years, until Camillus, who had been appointed dictator, penetrated through a mine into the city; and slaughter and outrage were the punishment of the long resistance of the people. (Livy v, 19—23.) Camillus carried even the statue of Juno, the protectress of Veii, to Rome, where a temple was erected to her on the Aventine hill. Veii was so completely laid waste, that, four hundred years later, herds grazed on its ruins (Propertius, iv. 10, vv. 29, 30); and in modern times, the very site of the ancient city has been a subject of much dispute. Livy's account of the distance of Veii from Rome (v, 4) seems to agree best with the situation of Monte Lupoli, along the Cassian road, in the wood of Baccano, the charming situation of which reminds the spectator of Athens. Cæsar established a Roman colony at Veii; but the Goths and Lombards destroyed it.

Vein. (See *Blood-Vessel*, and *Heart.*)

Velasquez, or **Don Diego Velasquez de Silva**, an eminent Spanish historical and portrait painter, was born at Seville in 1599. He studied under Herrera and Pacheco, and his first efforts were employed on familiar and domestic subjects, until the sight of some of the pictures of the Italian masters inspired him with loftier ideas. He was in particular charmed with the coloring of Caravaggio, whom he began to make his model; and his success in that style equalled his most sanguine expectation. Having spent five years with Pacheco, he repaired to Madrid, and obtained the patronage of the duke d'Olivarez, who introduced him to Philip IV, by whom he was appointed his principal painter (1623). While in that situation, Rubens arrived at Madrid, and recommended him to spend some time in Italy; which advice he followed, and acquired such an improvement in taste, correctness, composition and coloring, as placed him at the head of his profession. On his return to Spain (1631), he was received with the most flattering distinction; and he was, some time after (1648), employed by the king to make the tour of Italy, and procure a collection of pictures and statues. After his return to Spain (1651), Velasquez painted the royal family in a picture, called, by way of distinction, The Family, with which the king was so much pleased, that he raised him to the dignity of a noble (1658). His compositions are remarkable for their strong expression, freedom of pencil, and admirable tone of coloring. Among his best works are the Aguador, or Water-carrier, now in the palace of Madrid; the Brothers of Joseph; Job; Moses taken from the Nile; Lot and his Daughters; the Expulsion of the Moors by Philip III; with many portraits and pictures from common life. He died in 1660.

Velasquez de Velasco, Louis Joseph, marquis of Valdeflores, a Spanish historical writer, was born at Malaga in 1722, and, after completing his studies, was employed by Ferdinand VI to collect materials in Spain illustrative of the ancient history of the country. He left many materials in manuscript, and published *Origines de la Poesia Española* (Malaga, 1754), with some other works of value. He died in 1772.

Veld; a Dutch word, signifying the same as the German *Feld* (English *field*), and appearing in a number of geographical names.

Velde, William van der, called the *Old*, one of a distinguished family of painters, was born at Leyden in 1610. He was originally bred to the sea, but afterwards studied painting, and retained enough of his former profession to make it the source of his future fame. He became early distinguished for his excellence in marine subjects, which induced him to go to England with his son, both of whom entered into the service of Charles II. He is said to have repaid this service more gratefully than patriotically, by conducting the English fleet to burn Schelling. He was so much attached to his art, that, in order to be a near spectator of sea engagements, he hired a light vessel, in which he approached both friends and enemies, in order to sketch all the incidents of the action upon the spot; and in this manner he is said to have been a spectator of the engagement between the duke of York and Opdam, and of the memorable three days' engagement between Monk and De Ruyter. He chiefly painted in black and white, on a ground so prepared on canvass, as to give it the appearance of paper. He died at London in 1693. (See Walpole's *Anecdotes.*)

Velde, William van der, called the *Younger*, was born at Amsterdam, in 1633, and was the son of the preceding. After being carefully instructed by his father, he was placed under Simon de Vlieger, a celebrated painter of sea pieces, who, however, was far surpassed by his pupil. His subjects were similar to those of his father, whom he surpassed; and, in fact, no age, since the revival of art, has produced his equal in his own peculiar line, of which Walpole calls him the Raphael. He was, equally with his father, a copyist of reality, and, by order of the duke of York, attended the engagement at Solebay in a small vessel; as also the junction of the English and French fleets at the Nore. The principal performances of this admirable artist are chiefly to be found in the royal collections and cabinets of England. He died April 6, 1707, in his seventy-fourth year. (See Walpole's *Anecdotes*.)

Velde, Adrian van der, a celebrated Dutch landscape painter of the seventeenth century, was born at Amsterdam, in 1639, and died in 1672. He is one of the best painters of landscapes. He is also known for having painted the figures and animals in the landscapes of other artists, e. g. of his teacher Moucheron, Van der Hayden, &c. He also painted some large historical pieces.

Velde, Francis Charles van der, author of many historical novels, was born in Breslau, in 1779. He studied law, and held a judicial office in his native city, at the time of his death, in 1824. He has been called the German Walter Scott; but the historical element predominates much more in his novels than in Scott's. His complete works, with his biography, were published at Dresden in 1824, in 25 vols.

Veldeck, Henry. (See *Minnesingers*.)

Veleda, Velleda; a German prophetess in the country of the Bructeri, in the first century, much feared by the Romans, as she exercised a great influence over her countrymen. Her history is enveloped in darkness.

Veliki (Russian for *great*) is prefixed to many geographical names, to distinguish certain places from others of the same name, which have the epithet *malo* (little).

Velino. (See *Terni*.)

Velites, in Roman antiquity; young, light foot-soldiers, who fought in front of the lines, and retreated, if necessary, between the members of the first line (*hastati*). Napoleon introduced troops of this name into the regiments of infantry; and in the hussar regiments of Hungary there are also men called *velites*. The French sometimes call a skirmish a *velitation*.

Velleius, Paterculus. (See *Paterculus*.)

Vellum; a writing material, resembling fine parchment. It is made of calf-skin, extended and drawn to a proper thinness when green. Parchment is made of sheep-skins in like manner. (See *Parchment*.)

Velocipede (in German, *Draisine*, because invented by a Mr. Drais, in Manheim, in 1817) is a vehicle consisting of a piece of wood about five feet long and half a foot wide, resting on two wheels, one behind the other. On this an individual sits, as on horseback, so that his feet touch the ground. He propels the machine by pressing his feet slightly against the ground, and keeps his balance in the same way. The latter is the principal difficulty of beginners. In front of the saddle is a rest for the arms. The front wheel may be turned at pleasure, so as to enable the rider to give any direction to the machine. Knight, in England, improved it, and received a patent for it. On level ground a rider may perform five miles in an hour with ease.

Velocity. (See *Mechanics*.)

Velveret; a species of cotton velvet. (See *Velvet*.)

Velvet; a rich kind of stuff, all silk, covered on the outside with a close, short, fine, soft shag, the other side being a very strong, close tissue. The nap or shag, called also the *velveting*, of this stuff, is formed of part of the threads of the warp, which the workman puts on a long, narrow-channelled ruler or needle, which he afterwards cuts by drawing a sharp steel tool along the channel of the needle to the ends of the warp. Florence, Genoa, and some other cities of Italy, are most noted for the manufacture of velvet. There are cotton velvets manufactured in imitation of the silk ones in England. (See *Silk*.)

Vena Cava. (See *Heart*.)

Venaissin, Comtat de (*county of Venaissin*); a country of France, bounded north by the Drome, east by Lower Alps, south by Mouths-of-the-Rhone, and west by the Rhone, which separates it from Gard; about twelve leagues in length, and seven in breadth. It takes its name from *Venasque*, the *Vendansca* or *Vendasca* of the ancients. The popes laid claim to the sovereignty of this country, from the time of count Raymond de St. Gilles. This country now belongs to France, and forms part of the department of Vaucluse.

Venality of Offices, in France. (See *Paulette*.)

Venceslaus. (See *Wenceslaus*.)

Vendée, a department in the western part of France, formed from the ancient Poitou (see *Department*), and deriving its name from the river Vendée, is bounded by the departments of the Lower Loire, of the Two Sévres and of the Lower Charente, and by the Atlantic ocean. In the beginning of the revolution of 1789, the inhabitants of this part of the country, who were attached to the royalist cause, maintained a war against the republican government, which, had there been more concert among the Vendean leaders, or had foreign powers employed the opportunity judiciously, would have endangered the existence of the new republic. The scene of the war, familiarly called *Le Bocage* (the thicket), lay in three contiguous departments along the Loire, and was well calculated for maintaining a partisan warfare. It contains numerous small woods and thickets, and is much intersected by ditches and small canals. The Vendeans were a simple and ignorant race, attached to old usages, devotedly fond of the nobility of the province, and easily led by the clergy. The immediate occasion of the war was the resistance of the people to the operation of the conscription laws, in 1793. Cathelineau, a wagoner, at the head of 100 of his comrades, having overpowered a small body of republican troops, and taken possession of their arms, was encouraged to further enterprises; and similar risings took place at different points, but without any general coöperation. A wig-maker, Gastou, led the insurgents in the department of Vendée, and, having fallen soon after, was succeeded by Charette. Stofflet, a gamekeeper, led another band. The insurgents were at first armed only with scythes, clubs and pikes; but they soon obtained arms, by surprising detachments of the republican forces. Their knowledge of the country, and their excited enthusiasm, gave them advantages over their enemies, who were chiefly raw troops, and not always zealous in the cause of the republic. As soon as an enterprise was accomplished, the Vendean peasants immediately dispersed to their homes, and assembled again at a minute's warning. The young De la Rochejaquelein (q. v.) gained several advantages at the head of one of the bands. The number of the insurgents was gradually increased by the accession of emigrants and royalists from other parts of the country, and they had become possessed of regular arms. The convention, therefore, found it necessary to send troops of the line against them. June 24, the Vendeans took Saumur, and now received encouragement, but no effectual aid from abroad. Between the 19th and 23d of September (1793), several actions took place, of which that at Chollet was the most sanguinary, all to the disadvantage of the republican forces. But disunion began to prevail among the Vendeans. Charette, at the head of his followers, separated from the other insurgents, who were now hard pressed by the republican forces, and, deceived by expectations of aid in Brittany, took the imprudent step of crossing to the right bank of the Loire. They were equally disappointed in their hopes of assistance from England, which had induced them to approach towards the coast near Avranches, and were finally compelled to attempt a retreat over the Loire, after several bloody engagements. They reached the river towards the end of December, but were unable to effect a passage; and the battle of Savenay (Dec. 24), after which the Vendean army was entirely dispersed, concluded the campaign. The war had all along been conducted with great cruelty, and the fate of the surviving Vendeans and their families was dreadful. They were dragged in crowds to Nantes, where the monster Carrier, to whom the severe orders of the convention appeared too mild, and the ordinary modes of execution too slow, caused them to be drowned in masses (*noyades*). The convention now looked upon the war as ended; but, in the spring of 1794, La Rochejaquelein (who soon, however, fell) and Stofflet assembled new bodies of insurgents in Vendée, and Charette was at the head of his forces on the coast. At the same time, the Chouans (q. v.) appeared on the right bank of the Loire, in the departments of Morbihan and Côtes du Nord. They pretended the same zeal for religion, royalty and the nobility, but did not always make common cause with the Vendeans, with whom they must not be confounded. The events of this campaign were not so decisive as those of the preceding; but the obstinacy of the insurgents convinced the convention that Vendee could not be conquered by arms. After the fall of Robespierre, the insurgents were therefore invited, at the suggestion of Carnot (Dec. 1794), to return to their homes, with promises of pardon and oblivion of the past. In February, 1795, the deputies of the convention, and some of the Vendean leaders, among whom were Charette and Sapineau, agreed to the following conditions:—that a general amnesty should be granted, the Vendeans should acknowledge the authority of the republic, and should enjoy the unmolested exercise of their religion, freedom from military service, and indemnification for their losses; and Stofflet and the Chouans also acceded to these terms. But the peace was of short duration. The landing of some thousands of French emigrants at Quiberon (q. v.), June 27, 1795, encouraged the Vendeans to resume their arms. Charette declared, in a manifesto issued on the occasion, that the republicans had broken the treaty, and mentioned the death of the son of Louis XVI, which occurred at about this time, as the ground of this accusation. But the expedition to Quiberon, from which so much was expected, was rendered entirely ineffective (July 21) by the activity of general Hoche (q. v.), who continued the war in Vendée, with great mildness towards the inhabitants. He spared no efforts, however, to get possession of the persons of the leaders. Stofflet was taken Feb. 24, 1796, and shot at Angers. Charette, who was able to collect but few followers, wandered about some time, but was finally taken in March (23), and shot three days afterwards at Nantes. With the death of this leader, the three years' war of the Vendée terminated. The other leaders soon submitted unconditionally to the republic. Peace and order were gradually restored, and the government treated this part of the country with mildness, but not without mistrust. In the winter of 1799—1800, some symptoms of risings appeared; but the troubles were quieted by prudent and vigorous measures. In 1814 and 1815, some risings took place in favor of the Bourbons; but nothing decisive occurred. See the memoirs of general Aubertin, and those of general Turreau, in the collection entitled *Mémoires des Maréchaux de France*, and the *Guerres des Vendéens et des Chouans* (Paris, 1824—27, 6 vols.). The memoirs of madame de la Rochejaquelein contain vivid pictures of the events in Vendée.

Vendemiaire. (See *Calendar*, vol. ii, p. 403.)

Vendôme, the Family of, is descended from the natural children of Henry IV and the beautiful Gabrielle d'Estrée, who bore him two sons, Cæsar and Alexander Vendôme. One of their descendants was Louis, duke of Vendôme, the celebrated general of Louis XIV. He was born in 1654, early entered the military service, and received, in 1702, the command of the French army, in the war of the Spanish succession. After having distinguished himself in Italy, Tyrol and Belgium, the duke of Burgundy was placed over him; and the disagreement of the two commanders caused the defeat of the French at Oudenarde (July 11, 1708). Through the influence of madame de Maintenon (q. v.), the most experienced generals were displaced if they chanced to displease her, and Vendôme was now recalled; but when the affairs of Philip V, in Spain, began to wear a threatening aspect, the Spaniards requested Louis XIV to send them Vendôme. His arrival changed the state of things. December 9, 1710, he defeated the Austrian general Stahremberg at Villaviciosa; and, having reëstablished Philip's throne, he died in 1712, and was buried in the Escurial. His brother Philip was grand prior of the order of the knights of Malta, in France. He was born in 1655, served in the Spanish war of succession, and died in 1724.

Venerabile, with the Catholics; the consecrated host, which, during the religious service, is placed in a little box called *pyx;* at certain other times is put on the altar for adoration, or is carried about in procession, or publicly borne by a priest to a dying person, in Catholic countries.

Venereal Disease. (See *Syphilis*.)

Veneroni, John; a native of Verdun, whose proper name was Vigneron. Having engaged in the profession of an Italian master at Paris, he adopted the name by which he is usually designated, that he might pass for a native of Florence. He published an Italian Grammar and an Italian and French Dictionary, and some translations of Italian authors; also the *Dictionnaire Manuel, en quatre Langues, Français, Italien, Allemand et Russe* (Moscow, 1771, 8vo.). The Grammar of Veneroni is now held in little estimation: his Italian Dictionary has been superseded by that of Alberti. From the dates of his publications, it appears that he lived in the latter part of the seventeenth and the beginning of the eighteenth centuries.

Venetian School. (See *Italian Art*, and *Painting*.)

Venezuela; a republic of South America, bounded north and east by the Caribbean sea and the Atlantic, south by Brazil, and west by New Grenada, or Colombia. Its history, previous to its late separation from Colombia, has been given in the article *Colombia* (see, also, *Paez*), with a more particular account of its geography. The most remarkable natural feature of this country is the great river Orinoco. The lakes are Maracaybo and Valencia. The northern part is mountainous. The chain of the Andes traverses the whole country, in the direction of its shores. In the southern parts, on the Orinoco and its branches, are immense plains. The climate in the plains, or *llanos* (see *Llanos*, and *Llaneros*), is hot, and, in some parts, unhealthy. The productions are sugar, coffee, indigo, cotton and tobacco. The plains on the Orinoco furnish extensive pastures, which feed numerous herds of cattle.

Veni, Sancte Spiritus (*Come, Holy Spirit*); the name given to a mass, celebrated by Catholics, to invoke the assistance of the Holy Ghost. It was celebrated in France at the opening of the sessions of the two chambers, but was abolished in 1830, soon after the revolution of that year.

Venice (in Italian, *Venezia*). When the Visigoths (q. v.), the Huns (under Attila, 452) and the Lombards (568) poured into the Roman empire, and particularly into Upper Italy, which, even in the times of ancient Rome, was called *Venetia*, many of the poorer inhabitants took refuge on the islands in the lagoons of the Adriatic sea, particularly in the island of Rialto, which had already been somewhat built upon by the Paduans for commercial purposes. These emigrants established here a small democratic republic, under magistrates called *tribunes*. In 697 A. D., the islands elected their first *dux*, or doge (q. v.), in the person of Paolucci Anafesto. The doge had the executive, the people the legislative, the tribunes, or nobility, the judiciary power. The seat of government was afterwards in Malamacco, and, in 737, in Rialto, where, in a short period, a populous city arose out of the sea. This was the modern Venice, which soon became powerful by commerce and navigation, and ruled over the Adriatic sea. Commercial privileges in Rome and Constantinople promoted its prosperity, and the city was not long satisfied with the possession of the lagoon islands and the neighboring coasts, but made conquests in Istria and Dalmatia. As early as the wars with the Saracens, in the ninth century, the Venetians had become skilled in maritime warfare, by their struggles with pirates; and for this reason the cities of Dalmatia put themselves under their protection, about the year 997. Venice gained exceedingly by the crusades, and became not only the richest, but also the most powerful city of Lombardy, in which the treasures of all the East were collected. But the aristocracy already strove to oppress the people, and the doge endeavored to increase his power; hence repeated insurrections of the people. At length, after the assassination of the thirty-eighth doge, Vitali Michieli, in 1172, the constitution was so changed that the arbitrary power of the doge was limited, and the supreme authority was given to a numerous assembly of *nobili*, and strict laws were made to keep them within bounds. Under this limited aristocracy, the laws and government were improved. Manners became milder, and the arts began to flourish. The commercial power of the republic received its greatest extension under the doge Enrico Dandolo. This distinguished statesman and general, in the crusade undertaken by the Venetians, French and others, took Constantinople in 1202, at the head of a Venetian fleet, and acquired for the republic the possession of Candia (q. v.) and several Ionian islands, and others in the Archipelago. But after the restoration of the Byzantine empire (q. v.), in 1261, the East India trade passed from Constantinople to Alexandria; and the Genoese, who had greatly assisted in the destruction of the Latin empire, possessed themselves of the commerce in the Byzantine empire, which had been in the hands of the Venetians. In 1297, the doge Gradenigo introduced hereditary aristocracy, since the ancient great college of nobles, who shared the government with the doge, and were elected annually, declared themselves a permanent body of hereditary aristocrats (consisting of the noble families, whose names were entered in the "golden book"). At the same time, the establishment of the fearful council of the Ten must be considered as one of the causes which finally brought on the ruin of Venice. In the mean time, the republic extended her possessions more and more widely on the continent, particularly after her rival, the republic of Genoa, had been obliged to yield, in 1381, after a struggle of 130 years for supremacy in Lombardy. Vicenza, Verona, Bassano, Feltre, Belluno and Padua, with their territories, came under the power of Venice in 1402, Friuli in 1421, Brescia, Bergamo and Crema in 1428, and the islands of Zante and Cefalonia, in 1483. At last, the wife of James, the last king of Cyprus, Catharine Cornaro, a Venetian lady, ceded that beautiful country to her native republic in 1486. The senate of Venice, at that time, reminds the student of the ancient Roman senate. Other states made it their model: they even solicited for Venetian counsellors and leaders. Towards the end of the fifteenth century, Venice was rich, powerful, honored, comprising the most civilized people on earth, and devoted to the arts and sciences. But her political wisdom degenerated into a petty prudence and cunning. A grand inquisitor was necessary for the preservation of the republic. Circumstances also happened, which no prudence could avert. The Portuguese discovered the way by sea to the East Indies in 1498, and Venice entirely lost the commerce of the Indies by the way of Alexandria: the Turks had become masters of Constantinople, and overpowered all which stood in their way; they conquered, by degrees, all the possessions of Venice in the Archipelago and in the Morea, and even Albania and Negropont. But the republic saved herself, by skilful negotiations, from the danger with which the league of Cambray (q. v.) threatened her in 1508. This war, however, had much impaired her power. The Turks tore Cyprus from Venice in 1571, and, after a struggle of twenty-four years, Candia also, in 1699; but some fortresses on this island held out till 1715. The possession of the Morea, which had been reconquered in 1699, was required to be given up by the peace of Passarowitz, in 1718; yet the republic succeeded in preserving Corfu and Dalmatia. From this time, Venice no longer took part in the great political events, and was satisfied with preserving her antiquated constitution and her territory, which yet contained three millions of inhabitants. Thus she succeeded, by treaties with the Barbary powers, in 1763, in securing the inviolability of her flag, and established her rights of sovereignty against Rome in 1767 and 1769. But in the French revolutionary war, she became, in 1797, a victim to the French power. She excited a general insurrection on the *terra firma*, at the moment when Bonaparte entered Stiria, and the French were attacked in the rear; but Austria concluded the preliminaries of peace at Leoben, and the republic was annihilated. It was now of no avail to change the aristocratic constitution into a democratic. Venice was destined to be sacrificed. The peace of Campo-Formio (q. v.) gave the whole territory east of the Adige, with Dalmatia and Cattaro, to Austria; that west of the Adige to the Cisalpine republic (at a later period, the kingdom of Italy), to which, in 1805, the Austrian part of Venice and Dalmatia was added, yet without the islands in the Levant. Since 1814, Venice, with its territory, has formed a part of the Lombardo-Venetian kingdom, belonging to Austria. (See *Lombardy*, and *Lombardo-Venetian Kingdom*.) Istria, however, with some islands in the gulf of Quarnaro, was added to the *littorale* (q. v.) of the government of Trieste, and Dalmatia, with the islands belonging to it, to the government of Dalmatia. Into the most interesting part of the history of Venice—that of her domestic politics—our limits will not allow us to enter.—The chief works relating to the history of this republic, which is famous also in the annals of the fine arts, are Tentori's *Saggio sulla Storia di Venezia* (Venice, 1785—90, 12 vols.); La Beaume's *Hist. abrégée de la Rép. de Venise* (Paris, 1810, 2 vols.); Tentori's *Raccolta cronolog. ragionata di Documenti inediti, che formano la Storia diplomatica della Caduta della Rep. di Venezia* (Augusta, 1799, 2 vols., 4to.); Daru's *Hist. de la Républ. de Venise* (7 vols., Paris, 1819; 4th ed., 1827). In this work, the statutes of the Venetian political inquisition are printed for the first time. For an account of the constitution of Venice, see, also, Lacroix's *Review of the Constitutions*, &c. For a review of the Venetian historians, see Ranke's *Zur Kritik neuerer Geschichtschreiber* (Leipsic and Berlin, 1824); see, also, his *Fürsten* and *Völker von Süd-Europa* (Hamb., 1827), and his *Ueber die Verschwörung gegen Venedig in* 1618 (Berlin, 1831).

Venice (Italian, *Venezia*); capital of the government of Venice, in the Lombardo-Venetian kingdom, once the queen of the Adriatic, and yet one of the most remarkable cities of Europe. A city of this extent, built entirely on small islands, and having canals instead of streets, boats instead of cars, and black gondolas instead of coaches, is unique in its kind. It is situated in lon. 12° 21′ E., lat. 45° 26′ N., and is built, according to some, on ninety, according to others, on seventy-two islands, separated from the continent by the lagoons (a wide and shallow arm of the sea), and connected with each other by 450 bridges, among which is the magnificent Rialto, consisting of a single arch, 187 feet long and 43 wide. The houses, among which are numerous palaces, many of them decaying, and magnificent churches, adorned with precious monuments of Mosaic work, and splendid pictures of the Venetian school (e. g. the church of St. Maria della Salute and St. Giovianni Paolo), are mostly built upon piers, and almost all of them stand with their front towards the canals, which form wide and long passages, whilst the real streets are hardly passable for three persons on foot abreast. There are forty-one public places, indeed, but only the place of St. Mark, surrounded by arcades, and ornamented with two high columns, deserves the name. Here stands the church of St. Mark, an ancient edifice in the Byzantine style, ornamented within with Oriental magnificence. Here, says the legend, rests the body of St. Mark the Evangelist, which, according to tradition, was brought from Alexandria, in Egypt, under the doge Giustiniano. In front of the same are the antique horses, once the ornament of Constantinople, lately of Paris, and now again of Venice. The former palace of the doge, at present the seat of the Austrian government, is in the Gothic style. It contains the political prisons, or lead roofs (*piombi*), and the bridge of Sighs (the reader will remember Byron's verses, beginning, "I stood, in Venice, on the bridge of Sighs"); but the lion's mouth, with the inscription *Denunzie Segrete* (secret denunciations), has disappeared. Also the library, which has been described by its superintendent, the abbate Morelli, is in this palace. (See *Libraries*.) The place of St. Mark is the only walk of the Venetians, the place of meeting of foreigners and adventurers. The arsenal, one of the greatest curiosities of the city, is on an island, surrounded by high walls and towers. It contains every thing necessary for fitting out a fleet—good docks, well provided magazines, manufactories of cordage and sails, cannon founderies and forges. The stranger is yet shown here the richly gilt galley, called *Bucentaur*, in which the doge, from the year 1311, was accustomed to go out into the sea annually on Ascension day, to throw a ring into the water, and thus to marry, as it were, the Adriatic, as a sign of the power of Venice over that sea. Besides the patriarchal church, and twenty-nine other Catholic churches, there are here churches of the United Greeks (q. v.), Armenians and Protestants. In the ancient church De' Frati, a monument was erected, in 1827, in honor of the famous Canova. (q. v.) Contributions were furnished, for this purpose, from many parts of Europe, and even from America. The Jews have seven synagogues. Among the public institutions are the Conservatorio di Pietà, in which several hundred girls receive instruction in music, and in which, also, the celebrated artificial flowers of wax are made; the conservatory of music with funds for the education of twenty-four pupils, which formerly produced excellent performers; the imperial and royal library, the academy of fine arts, the school of navigation, the Armenian college, which prints, at an Armenian convent in this place, the Armenian newspaper, which is much read in the Levant, &c. The number of houses is stated to be 15,000, and that of the inhabitants 150,000. The principal manufactures are of cloth, linen, silk, gold and silver cloths, masks, artificial flowers, gold wire, and other works in gold, soap, wax, theriac, and chemical preparations; also copper and brass ware, leather, catgut and wire strings. Considerable ship-building is carried on. In the manufacture of glass, Venice was formerly the teacher of Europe, but at present is surpassed by other countries: the telescopes, spectacles and beads made here, however, are justly esteemed. On the whole, though the manufactures have much declined, and the commerce still more, Venice yet remains one of the most important commercial places of the Adriatic sea. In 1817, 1050 vessels, under the Austrian flag, left this port, and 2653 entered it, besides 315 foreign vessels. The value of the merchandise imported was 34,000,000 lire. The port is spacious, but the entrance is difficult, on account of the shallowness of the channels and the constantly fluctuating sand. To Venice belong the islands of Giudecca, St. Giorgio, St. Helena, St. Erasmo, Il Lido di Malamocco, Michele and Murano. These are mostly inhabited by artists, manufacturers and mechanics, and might be called the suburbs of the city. Here, also, excellent vegetables are raised. Formerly, Venice had neither fortifications nor garrison, and was strong merely by its situation: at present, there are fortifications on the side towards the mainland, and a strong garrison defends the city. Social life is at present almost extinct, and Venice appears like the corpse of the former city. It is enlivened only by the gayety of the carnival. The theatres are beautiful, but the arts do not flourish. J. Ch. Maier has written the most complete work on Venice.—See Moschini's *Guida per la Città di Venezia*, &c. (Venice, 1815, 2 vols., with engravings); Martens's *Journey to Venice* (2 vols., Ulm, 1824, with maps and engravings); also *Venice and its Environs*, by Jäck (Weimar, 1823). The first and the two last works are in German.

VENICE, GULF OF. (See *Adriatic Sea*.)

VENOMOUS ANIMALS. The venomous

serpents form about one fifth or one sixth of the whole class of snakes, and are distinguished especially by the two long poison-fangs, which take the place of the first or exterior of the three rows of teeth, found in the upper jaw of the innocuous species. At the root of these fangs is situated a small sack, containing the venom, and opening into the fangs, through which it is ejected by the pressure caused by the action of biting. The extraction of the fangs, or the removal of the sack, destroys their power of inflicting an envenomed wound. (See *Serpents*, *Rattlesnake*, and *Cobra da Capello.*) The symptoms resulting from the bite of all venomous snakes are nearly the same. Pain in the bitten part, extending towards the heart, stupor, cold sweats, pallor and lividity of countenance, and gangrene of the bitten part, are indications of such venomous bites. The best manner of treatment is to put a ligature upon the limb that has been bitten, between the wound and the trunk of the body, and apply a wine-glass, from which the air has been exhausted, by burning a little spirit within it, as a cupping-glass, over the wound; or to cause the wound to be sucked by a person whose lips and tongue are not chapped, until professional aid can be procured. Animal poisons of this description are innocuous when taken into the stomach, although their action is so powerful, and often fatal, when they are introduced into the system by a wound, or any other method of inoculation. If the lips or the tongue of the person who sucks the poisoned wound be chapped, the system is inoculated in the same manner as if it were inserted by a lancet or a bite under the skin. (For the symptoms and treatment of a wound inflicted by the bite of rabid animals, see *Hydrophobia.*) The stings of bees, wasps, and other insects, are sometimes, though seldom, fatal; but the pain which they excite is almost insupportable in some habits. The sting of a bee or wasp consists of a hollow tube, at the root of which is a bag full of a sharp, penetrating juice, which is injected, in the act of stinging, into the puncture made by the insect. This tube is, in fact, but a sheath, containing two little spears, by which the puncture is made. The part affected should be bathed with the tepid spirit of Mindererus.

VENTILATION. We are all thoroughly aware of the necessity of breathing; and the agreeable freshness and reviving influence of the pure morning air must convince us that the breathing a pure atmosphere is conducive to health; yet we as carefully exclude the air from our houses as if its approach were noxious. Intending to shut out the inclemencies of the weather only, in our care to guard ourselves from the external air, we hinder that renewal of the atmosphere which is necessary to prevent its becoming stagnant, and unfit to support animal life. Few persons are aware how very necessary a thorough ventilation is to the preservation of health. We preserve life without food for a considerable time; but keep us without air for a very few minutes, and we cease to exist. It is not enough that we have *air;* we must have *fresh air;* for the principle by which life is supported is taken from the air during the act of breathing. One fourth only of the atmosphere is capable of supporting life: the remainder serves to dilute the pure vital air, and render it more fit to be respired. A full-grown man takes into his lungs nearly a pint of air each time he breathes; and, when at rest, he makes about twenty inspirations in a minute. In the lungs, by an appropriate apparatus, the air is exposed to the action of the blood, which changes its purer part, the vital air (oxygen gas), into fixed air (carbonic acid gas), which is not only unfit to support animal life, but is absolutely destructive of it. An admirable provision of the great Author of nature is here visible, to prevent this exhausted and now poisonous air from being breathed a second time: while in the lungs, the air receives so much heat as makes it specifically lighter than the pure atmosphere: it consequently rises above our heads during the short pause between throwing out the breath and drawing it in again, and thus secures to us a pure draught. By the care we take to shut out the external air from our houses, we prevent the escape of the deteriorated air, and condemn ourselves to breathe, again and again, the same contaminated, unrefreshing atmosphere. Who, that has ever felt the refreshing effects of the morning air, can wonder at the lassitude and disease that follow the continued breathing of the pestiferous atmosphere of crowded or ill-ventilated apartments! It is only necessary to observe the countenances of those who inhabit close rooms and houses, the squallid hue of their skins, their sunken eyes, and their languid movements, to be sensible of the bad effects of shutting out the external air. Besides the contamination of the air from being breathed, there are other matters which tend to depreciate its purity: these are the effluvia constantly passing off from the surface of animal bodies, and the combustion of candles, and other burning substances. On going into a bed-room in a morning, soon after the occupant has left his bed, though he be in perfect health, and habitually cleanly in his person, the sense of smelling never fails to be offended with the odor of animal effluvia with which the atmosphere is charged. There is another case, perhaps still more striking, when a person, fresh from the morning air, enters a coach in which several persons have been close-stowed during a long night. He who has once made the experiment, will never voluntarily repeat it. The simple expedient of keeping down both windows but a single half inch would prevent many of the colds, and even fevers, which this injurious mode of travelling often produces. If, under such circumstances, the air is vitiated, how much more injuriously must its quality be depreciated when several persons are confined to one room, where there is an utter neglect of cleanliness; in which cooking, washing, and all other domestic affairs, are necessarily performed; where the windows are immovable, and the door is never opened but while some one is passing through it! It may be taken as a wholesome general rule, that whatever produces a disagreeable impression on the sense of smelling is unfavorable to health. That sense was doubtless intended to guard us against the dangers to which we are liable from vitiation of the atmosphere. If we have, by the same means, a high sense of gratification from other objects, it ought to excite our admiration of the beneficence of the Deity in thus making our senses serve the double purpose of affording us pleasure and security; for the latter end might just as effectually have been answered by our being only susceptible of painful impressions. To keep the atmosphere of our houses free from contamination, it is not sufficient that we secure a frequent renewal of the air: all matters which can injure its purity must be carefully removed. Flowers in water, and living plants in pots, greatly injure the purity of the air during the night, by giving out large quantities of an air (carbonic acid) similar to that which is separated from the lungs by breathing, which, as before stated, is highly noxious. On this account, they should never be kept in bed-rooms. There are instances of persons, who have incautiously gone to sleep in a close room in which there has been a large, growing plant, having been found dead in the morning, as effectually suffocated as if there had been a charcoal stove in the room. A constant renewal of the air is absolutely necessary to its purity; for, in all situations, it is suffering either by its vital part being absorbed, or by impure vapors being disengaged and dispersed through it. Ventilation, therefore, resolves itself into the securing a constant supply of fresh air. In the construction of houses, this great object has been too generally overlooked, when, by a little contrivance in the arrangement of windows and doors, a current of air might, at any time, be made to pervade every room of a house of any dimensions. Rooms cannot be well ventilated that have no outlet for the air: for this reason, there should be a chimney to every apartment. The windows should be capable of being opened; and they should, if possible, be situated on the side of the room opposite to, and farthest from, the fire-place, that the air may traverse the whole space of the apartment in its way to the chimney. Fire-places in bed-rooms should not be stopped up with chimney-boards. The windows should be thrown open for some hours every day, to carry off the animal effluvia which are necessarily separating from the bed-clothes, and which should be assisted in their escape by the bed being shaken up, and the clothes spread abroad, in which state they should remain as long as possible. This is the reverse of the usual practice of making the bed, as it is called, in the morning, and tucking it up close, as if with the determination of preventing any purification from taking place. Attention to this direction, with regard to airing the bed-clothes and bed, after being slept in, is of the greatest importance to persons of weak health. Instances have been known in which restlessness, and an inability to find refreshment from sleep, would come on in such individuals, when the linen of their beds had been unchanged for eight or ten days. In one case, of a gentleman of a very irritable habit, who suffered from excessive perspiration during the night, and who had taken much medicine without relief, he observed that, for two or three nights after he had fresh sheets put upon his bed, he had no sweating; and that, after that time, he never awoke but that he was literally swimming, and that the sweats seemed to increase with the length of time he slept in the same sheets. Various means are had recourse to at times, with the intention of correcting disagreeable smells, and of purifying the air of sick-rooms. Diffusing the vapor of vinegar through the air, by plunging a hot poker into a vessel containing it, burning aromatic vegetables, smoking tobacco, and exploding gunpowder, are the means usually employed. All these are useless. The explosion of gunpowder may, indeed, do something, by displacing the air within the reach of its influence; but, then, unfortunately, an air is produced, by its combustion, that is as offensive, and equally unfit to support life as any air it can be used to remove. These expedients only serve to disguise the really offensive condition of the atmosphere. The best means of purifying the air of a chamber which is actually occupied by a sick person, is by changing it in such a manner that the patient shall not be directly exposed to the draughts or currents. Chemistry, however, has furnished the means of purifying the air of chambers in which persons have been confined with contagious diseases, or in which bad air is generated in other ways, so as to destroy the noxious or offensive power of the effluvia generated in such situations, and thus of preventing its injurious influence. (See *Chlorine.*) No fumigation will be of any avail in purifying stagnant air, or air that has been breathed till it has been deprived of its vital part: such air must be driven out, when its place should be immediately supplied by the fresh, pure atmosphere. The readiest means of changing the air of an apartment is by lighting a fire in it, and then throwing open the door and windows: this will set the air in motion, by establishing a current up the chimney. The air which has been altered by being breathed is essential to vegetable life; and plants, aided by the rays of the sun, have the power to absorb it, while they themselves at the same time give out pure vital air. This process, going on by day, the reverse of that described before as taking place during the night, is continually in operation, so that the purification of the atmosphere can only be prevented by its being preserved in a stagnant state.

Ventose. (See *Calendar*, vol. ii, p. 403.)

Ventriloquism. Modern inquiries have proved that the ventriloquist (a very ancient expression, which originated from the erroneous supposition that the sounds uttered by the persons so called are formed in the belly) does not need any peculiarity in the construction of the organs of voice, but that practice only is necessary to carry this act of illusion to a high degree of perfection. They have also shown that the sounds are formed by the same organs as the emissions of sound commonly—the larynx, the palate, the tongue, the lips, &c.; that the sound is not produced during inspiration, but proceeds, as usual, during expiration, with a less opened mouth. The art of the ventriloquist consists merely in this after drawing a long breath, he breathes it out slowly and gradually, dexterously dividing the air, and diminishing the sound of the voice by the muscles of the larynx and the palate: besides this, he moves his lips as little as possible, and, by various contrivances, diverts the attention of his auditors. Alexander (born in Paris, 1797) has lately distinguished himself by his skill in this art. The ancients also had ventriloquists. The Greeks called them *engastrimanteis*, and considered their art the work of demons.

Venue; the neighborhood from whence juries are to be summoned for trial of causes. In local actions, as of trespass and ejectment, the venue is to be from the neighborhood of the place where the lands in question lie; and, in all real actions, the venue must be laid in the county where the property is for which the action is brought.

Venus; the Roman name of the goddess of love, called by the Greeks *Aphrodite.* The poets mention an elder Venus, the daughter of Uranus, and a younger, the daughter of Jupiter and Dione; but the events in the history of the two are often confounded. From these events, and the places where Venus was particularly worshipped, she received her various epithets. The elder Venus is called *Venus Urania* (heavenly Venus), to indicate that she is the goddess of love refined from sensuality, and is thus distinguished from the younger Venus, or earthly love (*Venus pandemos, vulgaris*). Undoubtedly the notion of the Asiatic goddess of nature, representing the female, generative principle, came from Syria and Phœnicia, and was developed and modified by the Greeks. According to the Greek fable, Venus originated from the foam of the sea; hence she was called *Aphrodite, Anadyomene* (q. v.), and represented sometimes with a sea-green veil. Great power over the sea was also ascribed to her; and mariners implored her protection. The myrtle was sacred to her, because she hid herself behind such a tree, when she stepped, naked, out of the sea, on the shore of the island of Cythera. On this island (at present *Cerigo*), she was particularly worshipped, and was therefore called *Cythera*. From similar causes, she was also called *Cypris*, *Gnidia*, *Paphia*, *Idalia*, &c. She is represented by the Greeks as the highest ideal of female beauty and love, sometimes entirely naked, sometimes but slightly covered. Swans, doves, also sparrows, draw her chariot. Her son Cupid generally accompanies her: sometimes the Graces follow her. She had no children by Vulcan, her husband, but had many by other gods, as Mars, Bacchus, Mercury, &c. The most known of her children are Amor (Cupid or Eros) and Anteros, Hymen, Hermaphrodite and Æneas. (See these articles.) She also bestowed her favors on mortals, and loved, particularly, the beautiful Adonis. (q. v.) When the goddess of discord (Eris) rolled an apple, with the inscription "To the most beautiful," into the assembly of the gods, Paris decided that it belonged to her. Among the Greeks, Praxiteles made particularly beautiful statues of her. Of these, one was uncovered below (the Coan Venus), and one entirely naked (the Cnidian Venus), rising out of the bath. Of the latter, the Capitoline Venus is, according to Meyer, a copy. Praxiteles is believed to be the first sculptor who ventured to make a statue of Venus entirely naked. Millingen (Inedited Monuments of Grecian Art) says that all the statues of female divinities anciently had drapery, and that the innovation of Praxiteles was considered extremely indecorous, but excused on account of the beauty of the performance. Subsequent artists, wishing to reconcile a mode of representation so favorable to the purposes of art with the rules of decorum, adopted the form of drapery seen in the Venus of Capua (in the Museo Borbonico at Naples), and of Melos (in the Louvre), namely, a mantle covering the lower part of the body, and falling to the ground. The statues of Venus, which, in imitation of that of Cnidus, are found in a state of nudity, are almost always to be referred to a low period. The Venus de' Medici was found in the Villa Hadriana, at Tivoli, and carried to Florence in 1695. It is only four feet eleven inches and four lines in stature, but is exquisite in all its forms and proportions. It is probably much injured by the restored parts, the hands, &c. The most celebrated statues of Venus are the following: Venus Aphrodite, or Anadyomene, and the naked Venus, with the right hand held over the breast, and the left over the pudenda (the Venus de' Medici, in the ducal gallery of Florence), or standing on a chariot of shells, drawn by Tritons and Nereids, and wiping her hair. Many modern artists have painted Venus: Titian excelled all others in the voluptuous glow and the beauty of his figures. Venus Urania was represented in Sparta with a bow and arrows, or armed with a spear and a helmet. In modern times, the Venus of Melos has been found, and has attracted much attention. (See, also, *Proserpina*. Respecting the planet Venus, see *Planets*.)

VENUS'S FLY-TRAP. (See *Dionæa*.)

VERA CRUZ; a state of the Mexican confederacy, formed, with the states of Tabasco and Chiapa, out of the former intendancy of Vera Cruz; bounded east by the gulf of Mexico, north by the state of Tamaulipas, and west by Puebla and Mexico. It is of great importance, in consequence of its containing the harbors which form the principal means of communication between the territory of the republic and the rest of the world. The eastern part, along the coast, consists of hot and unhealthy plains, while the western part forms the declivity of the Cordilleras of Anahuac; and such is the steepness of the mountains in this part of the country, that a traveller may pass, in the course of a day, from suffocating heats to frosts, traversing, as it were, successive layers of climates. (See *Mexico*.) Although the soil is fertile, the state is thinly peopled, in consequence of the unhealthiness of the climate, and the preference given by the Spanish and native Mexicans to the table-land as a place of residence. It contains the volcano of Orizaba, having an elevation of 17,208 feet, and the coffer of Perote, 13,289 feet high, and familiar to navigators as the first land seen when approaching the coast of Mexico. The mountain of Tuxtla, also within its limits, is subject to volcanic eruptions. The principal towns are Vera Cruz (q. v.); Xalapa, known in commerce as the place supplying the greater part of the drug which has received its name (see *Jalap*), and celebrated for the genial atmosphere and beautiful country in which it is placed, with a population of 13,000 souls; Tampico, an important seaport at the mouth of a river of the same name, with 20,000 inhabitants; and Papantla, with 8000 inhabitants. The state has a population of 233,700 souls. Its chief productions are tobacco, coffee, cotton, &c.

VERA CRUZ; a seaport of Mexico, in the state of the same name, on the gulf of Mexico, 200 miles east by south of Mexico; lon. 96° 9′ W.; lat. 19° 12′ N.; population, 30,000. Opposite to the town, on a small island, stands the castle of St. Juan d'Ulloa, fortified by 300 pieces of cannon. About 100 merchant vessels may anchor here, in from four to ten fathoms; but the northern winds often drive vessels on shore. The port is not commodious, being merely a bad anchorage among shallows. Vera Cruz is the great seaport of Mexico, and the place through which almost all the trade between that country and Europe and the U. States of North America is carried on. The town is situated on an arid plain, without running water, and on which the north winds, which blow with dreadful impetuosity from October to April, have formed hills of moving sand, from twenty-six to thirty-eight feet high, which change their form and situation every year. The city is handsomely and regularly built, the streets broad and straight; but its climate is hot and unhealthy, and extremely subject to the yellow fever. This dreadful distemper generally commences its ravages when the mean temperature rises to 75°. In December, January and February, when the heat remains below this limit, it generally disappears. The buildings are constructed from materials drawn from the bottom of the ocean, the habitations of the madrepores; for no rock is to be found in the environs, though freestone has now begun to be brought from Campeachy. The ascent from the city into the interior, which is a plain elevated nearly 8000 feet above the level of the ocean, is through difficult and narrow roads.

Veratrine; a white, inodorous substance, very sharp to the taste, without any bitterness, found in the seed of the *veratrum sabatilla*, the *V. album*, or white hellebore, and in the bulbs of the *colchicum autumnale*, or meadow saffron. It fuses at 122°, becoming a white mass, like wax. At a higher degree of temperature, it decomposes, and affords all the products of vegeto-animal substances. It is soluble in ether and alcohol, wholly insoluble in cold water: boiling water scarcely dissolves the one thousandth part; yet this small quantity communicates to it a very sensible sharpness of taste. In a degree, it possesses alkaline properties, changes litmus paper, reddened by an acid, blue, and saturates the acids, with which it forms uncrystallizable salts. Concentrated nitric acid decomposes it without giving it a red color. According to MM. Pelletier and Dumas, it consists of

Carbon,	66.75
Nitrogen,	5.04
Hydrogen,	8.54
Oxygen,	19.60

It exercises the same action upon the animal economy as the hellebore, but with much greater energy.

Verb (from the Latin *verbum*); that important part of speech in which a subject is conceived of under certain relations of time. It therefore belongs to the, so called, *attributive parts of speech*, or those which determine the predicate of the subject indicated by the noun. The idea of personality; the various states of time, action and passion; the ideas of singular and plural, and numerous shades of signification connected with it, render the verb one of the most interesting subjects of investigation to the philologist. What can be finer and more delicate than the structure of the Greek verb? what more curious to a man whose native language belongs to the European stock, than the verb of the North American Indian? (See *Indian Languages*, in appendix to vol. vi.) Again—what wonderful modifications do we meet with in the Hebrew verb! How striking is the Sanscrit verb! The verb of the different nations shows us, more than any other part of speech, the different division of ideas, if we may call it so, which takes place in different languages; for instance, in most languages known to us, the idea that something is affected by the action of something else, either has not a peculiar form of expression (this is generally the case in English), or is expressed by the accusative of the object, that is, by a change in the name of the object, e. g. *Filius amat patrem*. But there are languages in which this idea is expressed by a change in the subject, which acts; and this is as logical a way as the other. An object may be conceived merely in reference to time, or in a peculiar state of action or passion. The former mode of conceiving them is the basis of the verb *to be* (*verbum substantivum*), which is therefore used to unite the subject and predicate (e. g. I am unwell), and becomes an auxiliary verb. In the case of those verbs which indicate a peculiar state of the subject, together with the idea of time, the state may have reference to the subject alone ("I sit," "I lie"), or, at the same time, express a relation of action or passion between the subject and an object. The first kind of verbs are called *intransitive* or *neuter* (because they neither act nor suffer). To them belongs the verb *to be*. The other class is called *transitive*. The transitive verbs are either active or passive. The former indicate action (e. g. "I read a book"), and include the reciprocal verbs (e. g. "I bathe myself"), in which the subject makes itself the object. The passive verb indicates that the subject is the recipient of the action, as, "I am beaten," which, however, appears clearer in those languages that have peculiar forms for this state, as *amor* ("I am loved"). The passive form has also a reflective meaning; that is, it indicates a relation of the subject to itself, which, in the Greek grammar, is called the *middle voice*. The deponent verb and neuter passive verb are particular forms of particular languages. Besides the three voices (*genera*), there are the *modes* (i. e. the ways in which the predicate is brought into relation to the subject, whether it is given as necessary, real or possible). To these forms belong the imperative and conjunctive, or subjunctive. But languages do not always represent these modes in peculiar forms. One of the peculiar modifications of the mode is the Greek optative. Formerly, the infinitive was also called a mode; but the infinitive does not necessarily belong to the predicate, and may also take the place of a substantive. In the same way the participle is not a mode, but only an adjective formed from the verb.—Further, we must notice the various forms of time (*tenses*), i. e. those forms of the verb by which its state is indicated in reference to peculiar times. These are, in general, the present, past and future; hence the simple tenses are the *present*, *perfect* or *preterit*, and the *future*; but these are still more modified in most languages, and are expressed either by peculiar forms or by paraphrases with auxiliary verbs. These tenses are called *absolute* if they state any thing without reference to something else, and *relative* if they do it with reference to another time or action (e. g. "I had done it when he came"); to which, therefore, belong the *imperfect*, *pluperfect* and *future*.—We must next notice the three persons, of whom something is stated by the verb. There are three in the singular and three in the plural (i. e. the subject, another one present, or addressed, and another one absent, and not addressed). The plural expresses the same relations as existing in the case of two or more individuals. The persons are *I*, *thou*, *he*, *we*, *you*, *they*, which are indicated by pronouns, or forms in the verb, or by both. Where there is no person, the verb becomes impersonal (e. g. "it thunders"). Some languages go further, and designate also the genus of the person acting or being in a certain state, and express in the verb whether this person is male or female; so that, where the Latins have but one form for *amat*, they would have two forms. To set forth all the various forms of a verb used for the designation of the manifold relations which it is fitted to express, is called *conjugating* it. The conjugation is regular or irregular; the first when it conforms to certain rules existing in the language, the latter if the verb deviates from these. Most of the irregular verbs, however, can be brought again under certain rules, and so far become again regular. As respects their origin, verbs are primitive or derivative. To the latter class belong those by which the state is designated as modified by circumstances (e. g. *dictitare*, from *dico*, in Latin; *spötteln*, from *spotten*, in German). Often, however, the verb is derived from some adjective or substantive.

Verbenalia. (See *Vervain.*)

Verde, Cape. (See *Cape Verde.*)

Verde (Cape) Islands. (See *Cape Verde Islands.*)

Verdict. (See *Jury*, vol. vii, p. 287.)

Verdigris; an impure acetate of copper, being a mixture of the acetates and the carbonates of copper, and the hydrated oxide of copper. The best varieties approximate to the following composition:—

	French.	English.
Acetic acid,	29.3	29.62
Peroxide of copper,	43.5	44.25
Water,	25.2	25.51
Impurity,	2.0	0.62

Verditer is a blue pigment, obtained by adding chalk or whiting to the solution of copper in aquafortis. It is prepared as follows:—A quantity of whiting is put into a tub, and upon this the solution of copper is poured. The mixture is to be stirred every day for some hours together, till the liquor loses its color. The liquor is then to be poured off, and more solution of copper is to be added. This is to be repeated till the whiting has acquired the proper color. Then it is to be spread on large pieces of chalk, and dried in the sun. It consists of

Carbonic acid,	30.00
Water,	3.33
Lime,	7.00
Oxygen,	9.33
Copper,	50.00

Verdun (anciently *Verodunum*); a town of France, and principal place of a district in the department of the Meuse; lon. 5° 22′ E.; lat. 49° 9′ N.; population, 10 000. Before the revolution, it was the capital of a province called *Verdunois*. It is large, populous, and consists of three parts, the upper, lower and new towns, and contains nine churches and three hospitals. Exclusive of its fortifications, this place is further defended by a fine citadel. By the treaty of Verdun (843), the sons of Louis le Débonnaire, son and successor of Charlemagne, divided the Frankish empire between them, and thus completed the separation of the German and Italian crowns from the French.

Vere, Edward; earl of Oxford; one of the literary courtiers of queen Elizabeth. He was descended from one of the most ancient families of the English nobility, his father being the sixteenth peer who had held the title, which became extinct in the reign of queen Anne. He was born about 1540, and received an education suitable to his rank. He held the office of lord high chamberlain, and sat as such at the trial of the queen of Scots, and subsequently at those of the earls of Arundel, Essex and Southampton. Specimens of his talents as a poet are preserved in the Paradyse of daintie Devyces. His personal character seems to have been by no means favorable. He had a quarrel with sir Philip Sidney, which did him no credit; and he is said to have ill-treated his wife, who was the daughter of lord Burleigh. His death took place in 1604.

Vergennes, Charles Gravier, count de, minister of state in the reign of Louis XVI, was born at Dijon, in 1717. His father was one of the presidents of the parliament in that city. Vergennes entered, at an early age, on the diplomatic career, under the patronage of Chavigny, the French ambassador to the court of Lisbon, and, in 1750, was appointed minister to the elector of Treves. His services in Germany were rewarded with the post of minister plenipotentiary (1753), and soon after (1755) with that of ambassador to Constantinople. Here he succeeded in inducing the grand seignior to preserve his neutrality, until the peace of 1763 put an end to the intrigues against which he had hitherto successfully struggled. In 1768, he was recalled from Constantinople, but, in 1771, was sent to Stockholm, where he found the nation distracted by the factions of the Hats and Caps, and contributed much to the result of the revolution, which took place at that period in Sweden. (See *Gustavus III*, and *Sweden*.) Louis XVI, on his accession to the throne, put Vergennes at the head of the department of foreign affairs; and in this capacity he concluded a treaty with the commissioners of the U. States, Jan. 26, 1778, who had been long suing in vain for the public acknowledgment of the independence of the republic. Vergennes was not a man of superior talents, but had much coolness, industry, experience and judgment. The chief resource of his policy was delay; hence his evasions and ambiguous measures. The conclusion of the treaty with the U. States led to a rupture with England, and France lost, in the war with that power, all her Indian possessions. In 1783, Vergennes concluded an advantageous peace with Great Britain; but the great expense of the war involved the French finances, and increased the public debt to such a degree as to render the difficulty beyond relief. Vergennes did not possess the favor of the queen, as he opposed, although guardedly, the projects of her brother Joseph II. Choiseul was his rival. The dilatory and temporizing policy of Vergennes, on all points, contributed not a little to diminish the influence of the French cabinet in foreign countries, while it deprived him of the respect of the nation. He did not live to witness the actual outbreak of the revolution, but died in 1787, before the meeting of the first assembly of the notables, the convocation of which he had advised. Louis XVI believed that he would have prevented the revolution, had he lived.

Vergniaud. (See *Girondists*.)

Verjuice; a sharp vinegar, made of the juice of the crab apple. The sour juice of unripe grapes, used for culinary purposes, is also called *verjuice*. Formerly, a cooling sirup was made of it for fever patients; but it has gone out of use for this purpose.

Vermes. (See *Worms*.)

Vermeyen, John van, also called *John with the beard*, a famous historical painter, son of Cornelius Vermeyen, was born in 1500, at Beverwik, near Harlem. He was a favorite of Charles V, and accompanied him often on his journeys, and even on his expedition to Tunis, in 1535. Rich tapestry, now in Vienna, was made after his designs of the achievements of Charles. Though he was tall, his beard was so long that he could tread upon it, when standing. He died at Brussels, in 1559. His ten cartoons, representing

Charles's expedition to Tunis, in water colors, twenty feet long and twelve feet high, are celebrated. They are in Vienna.

Vermicelli (Italian, *little worms*); an Italian mixture, prepared of flour, cheese, yolks of eggs, sugar and saffron, and reduced into little long pieces, or threads, like worms, by forcing it, with a piston, through a number of little holes in the end of a pipe made for that purpose. It is much used in Italy and other countries, in soups, broths, &c.

Vermilion; in painting, a bright and beautiful red color, composed of quicksilver and sulphur, in great esteem among the ancients, under the name of *minium*. That preparation, however, which bears amongst us the name of *minium*, is of lead, known also as *red lead*.

Vermont, one of the United States of America, is bounded north by Lower Canada, east by Connecticut river, which separates it from New Hampshire, south by Massachusetts, west by New York; lon. 71° 33′ to 73° 26′ W.; lat. 42° 44′ to 45° N.; length, 157 miles; breadth, 90 on the north line and 40 on the south; population in 1820, 235,764; in 1830, 280,657. The face of the country is generally uneven, and a great part of it is mountainous. The Green mountains (in French, *verd mont*), from which the state derives its name, extend through the whole length from north to south, and are from ten to fifteen miles wide, and intersected by valleys. They lie principally on the east side of Bennington, Addison and Rutland counties. In Chittenden county, they appear to divide. The western range presents much the loftiest summits, but has inequalities which afford passages for Onion and Lamoille rivers. The highest summits of the Green mountains are Killington peak, Camel's rump, and Mansfield. Ascutney is a noted mountain on the east side of the state, south of Windsor. A large portion of the soil is fertile, and fitted for the various purposes of agriculture. It is generally deep, of a dark color, rich, moist, warm, loamy, and seldom parched with drought. The low lands, on the banks of the rivers, are generally most esteemed; but a great part of the land on the large swells is excellent both for grazing and tillage. Wheat is extensively cultivated, particularly on the west side of the mountains. Barley, rye, oats, peas, flax and potatoes flourish in all parts of the state. Indian corn also produces considerable crops, and apples grow very well. Maple sugar is made in quantities nearly equal to the home consumption. This state is, however, peculiarly adapted to grazing, and great numbers of cattle, horses and sheep are sold for the markets of Boston, New York and Montreal. The principal articles of export are pot and pearl ashes, beef, pork, butter, cheese. flax, and live cattle. The trade is principally with Boston, Hartford, New York and Montreal. Iron ore, of good quality, is found in many places. There are quarries of marble in Middlebury, Bennington, Arlington, Shaftsbury, Pittsford and Swanton. Porcelain earth is found at Monkton. There are also some lead and copperas mines. Among the most considerable manufacturing towns are Middlebury, Bennington, Montpelier, Brattleborough, Burlington and Windsor. The climate of Vermont is healthy, but subject to great extremes of heat and cold. The winters are long and very cold; and, in many parts of the state, some snow falls almost every day for three months. The west bank of Connecticut river forms the east line of the state. The other principal rivers are Lamoille, Onion, Otter creek and Missisque. There are no very large towns in Vermont. Montpelier is the seat of government. The other most considerable towns are Burlington, Middlebury, Bennington, Windsor, Woodstock and Rutland. There are two colleges in Vermont, at Burlington and at Middlebury. Academies are established in many of the principal towns, and common schools receive great attention. The principal denominations of Christians are Congregationalists, Baptists and Methodists. There are a few of many other sects. The first discoveries in this part of the U. States are supposed to have been made by Samuel Champlain, a French nobleman; and he gave his own name to the lake which divides New York and Vermont. In 1724, the provincial government of Massachusetts built fort Dummer, on Connecticut river, in the county of Windham. In 1731, the French built a fort at Crown Point, and commenced a settlement nearly opposite to it. For several years after these settlements, the Indians claimed the greater part of Vermont; and they were too hostile to allow much progress to the whites. After Canada had fallen into the hands of the British, in 1760, Vermont began to be settled rapidly. Its territory was claimed both by New Hampshire and New York. A warm controversy resulted from these conflicting claims, which was decided by the king in council in

1764, in favor of New York. The governor of New Hampshire had made several extensive grants of land in Vermont, and many persons had settled upon them, made improvements, and paid for them. When the jurisdiction of New York was established, the government of that state declared these grants to be void, and demanded exorbitant prices of the occupants for the lands for which they had once paid. This produced a serious quarrel, which lasted for twenty-six years, till after the close of the revolutionary war. Some of the occupants repurchased their lands, but most of them refused. The party resisting these demands of New York was headed by Ethan Allen and Seth Warner; and so serious had the quarrel become when the war with Great Britain diverted their attention, that the governor of New York had issued a proclamation, declaring that, unless the offenders surrendered themselves within seventy days, they should be deemed guilty of felony, and liable to capital punishment. At the same time, a reward of fifty pounds was offered for the apprehension of Allen, Warner, and six other leaders. During the war of the revolution, the "Green mountain boys" were distinguished for their hardihood and bravery; but they were little disposed to any alliance with New York, and waited, even after the war, to see what kind of a union of the states was to be formed before they decided that it was for their interest to become a member of the union. They declared the state independent in January, 1777. The first constitution was established in July of the same year. After the termination of the war, New York claimed jurisdiction over Vermont, and the Vermonters resisted. The differences were adjusted in 1790, Vermont paying to New York $30,000, in full of all demands. In 1791, Vermont was admitted into the federal union. Its constitution was revised and established in its present form in July, 1793. (See *Constitutions of the United States.*) The following items of statistics are from Walton's Vermont State Register for 1831:—Academies and high schools in Vermont, 35; district schools, 2400; clergymen, 350; attorneys, 172; physicians and surgeons, 289; mechanics and manufacturers, 1039; merchants and traders, 364; houses, 36,170; oxen, 48,315; cows and other cattle of three years old, 121,400; horses and mules, 61,232; sheep, 725,965; militia, 25,500.

Vermont University. (See *Burlington.*)

Vernet; a family of artists distinguished even in the third generation.—*Claude Joseph Vernet*, who excelled all his contemporaries in sea pieces, was born at Avignon, in 1714, and was the son of *Antonio Vernet*, also a painter. When eighteen years old, he went to Rome, by sea; and the circumstance of his voyage decided his talent. He was accustomed to draw whatever he saw. The sea occupied his mind so much, that on one occasion, in a violent storm, he had himself bound to the mast of the vessel in which he was, to gaze on the sublimity of the enraged element, whilst the captain and sailors trembled for their lives. Thenceforth, he occupied himself solely with sea pieces, or pictures of ports and strands. For twenty years, he lived happily in Italy, in a close friendship with Pergolesi (q. v.), who composed part of his *Stabat Mater* (q. v.), in his painting room. At length the splendid offers of the French government induced him to return to France, in 1752, where he was to paint the most important ports. Thus originated that excellent collection which is yet in the Louvre. Between 1752 and 1789, when he died, he is said to have painted no less than 200 pictures. Calms and storms, sea and shore, are represented with exquisite ease and truth. In 1752, he was made a member of the French academy, and, in 1766, counsellor; but these distinctions and a lodging in the Louvre were the only favors bestowed upon him by the king. His contemporaries esteemed him equally for his cultivated mind and amiable manners as for his genius.—*Antoine Charles Horace Vernet*, son of the preceding, was born in 1758, at Bordeaux, went as a pensioner of the king to Rome, was made a member of the academy in 1787, and received the same honor again in 1814. He excelled in battle and parade pieces of large dimensions, in which he has commemorated the battles of Rivoli, Marengo, Austerlitz, Wagram, the departure of the marshals, &c. More pleasing to many are his smaller scenes, mostly referring to battles and camps. His studies of nature and his hunting pieces, especially the lithographical ones, are much sought for by connoisseurs, and have a vivacity and boldness of conception in which his only rival is his son *Horace Vernet*. The twenty-eight plates, in folio, illustrating the campaign of Bonaparte in Italy, are considered as some of his most successful efforts. He is a knight of the legion of honor and of St. Michael.—*Horace Vernet*, son of the preceding, and heir of his father's and grandfather's talent, was born in 1789, in the Louvre. The feeling of the great and patriotic, which animated so many hearts in the time of his youth, is expressed in all his works. He began with battle pieces (Jemappes, Montmirail, Hanau), which acquired him reputation. His pictures are praised for giving prominence to the chief aim of the victorious army, and for indicating the event of the battle by the movements of the lines. He labored with equal success in his father's branch. In fact, he seems to have excelled in many departments. His domestic scenes, rural feasts, huntings, caverns of robbers, &c., excel all those of his contemporaries, notwithstanding the amount of talent which, of late years, has been turned in this direction. His pictures are the more impressive on account of their freedom from affectation. France yet speaks with delight of his *Soldat Laboureur*, *Soldat de Waterloo*, &c., so often repeated in lithographic sketches. His *Le Chien du Régiment* is another, we might almost say, national production in France. He also made the lithographic sketches for the magnificent edition of the *Henriade*, by Dupont, in 1824. But there would be no end were we to enumerate all the distinguished works of this excellent artist.

Vernier (also called *Nonius*, after the inventor, whom some believe to have been the Frenchman Peter Vernier, chaplain at Ornans, in Franche Comté, about 1630, others the Portuguese Nuñez or Nonius, died 1577). It is an ingenious instrument, intended to give, in cases of divisions, the value of fractions which fall between two of the smallest divisions. Imagine, e. g. a rule, on which there are eleven inches divided into twelve equal parts: each of these parts is, of course, $= \frac{11}{12}$ inches, i. e. = 11 lines.* If, now, the above-mentioned rule were so made that it might be moved along another one divided into inches, it is easily seen that if the first line of division on the one rule coincides with that on the other, the second line of the vernier stands $\frac{1}{12}$ of an inch from the second line on the other rule, the third $\frac{2}{12}$, and so on; and thus we are enabled, by merely moving the vernier, to give fractional parts of inches, without being obliged actually to make the difficult subdivision on the rule. In a similar way, this contrivance is attached to circles, quadrants, &c., e. g. by dividing nine minutes on the vernier into ten equal parts, according to which each part is $= \frac{9}{10}'$, so that the parts upon the vernier and the arc stand respectively $\frac{1}{10}'$, $\frac{2}{10}'$, $\frac{3}{10}'$, &c., from each other.—For particular information on this subject, see Biot's *Traité d'Astronomie* (2d. ed., Paris, 1810).

Vernon, Edward; a distinguished English admiral, descended from a Staffordshire family, but born in Westminster, in 1684. He adopted the naval profession, in opposition to the wishes of his father, who held the post of secretary of state to William III. He first went to sea with admiral Hopson, and, in 1704, served under sir George Rooke at the battle of Malaga. He was also employed on many other occasions, and gradually arrived at the rank of vice-admiral. In 1739, when the treatment of the English traders by the Spaniards in America had excited great indignation in England, admiral Vernon, who was a member of the house of commons, spoke warmly against the indifference of the ministry to the complaints of the merchants, and pointed out the means of redressing or avenging the injuries which they had suffered. In consequence of these representations, he was sent with a squadron to the West Indies, where he took the town of Porto Bello, in 1739, and destroyed the fortifications. In 1741, he was sent out again to attack Carthagena; but the expedition proved unsuccessful. In both of these expeditions, the British forces were joined by American troops; and, in the latter case, there was a great mortality among the troops, who were unaccustomed to the tropical climate of New Grenada. Admiral Vernon had the honor of giving his name to the seat of general Washington, at that time in possession of his brother, who had served under the admiral. During the rebellion, in 1745, he was employed in defending the coasts of Kent and Sussex; but, on account of his opposition to the ministry, he was subsequently superseded, and even struck off the list of admirals. His death took place Oct. 29, 1757.

Vernon, Mount. (See *Mount Vernon*, and *Washington*.)

Verona; a delegation of Austrian Italy, in the government of Venice, watered by the Adige, and, though partly mountainous, having an agreeable climate and a fertile soil. The productions are corn, wine, oil, flax and silk: in the mountains is beautiful marble. Population, 285,000; square miles, 1330.

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* Thirteen inches might as well have been divided, on the vernier, into twelve parts. In general, the rule is, the number of parts on the vernier must be equal to the denominator of the fraction which expresses the required subdivision, and the number of the standard divisions of measure which it contains must be one larger or less. In both cases the object is obtained.

Verona; an ancient city, formerly belonging to Venice, now to the Austrian Lombardo-Venetian kingdom, capital of the above delegation, formerly capital of a district called the *Veronese*, on the Adige, eighteen miles north-north-east of Mantua, and sixty miles west of Venice; lon. 11° 1′ E.; lat. 45° 26′ N.; population, 55,000. It is a bishop's see. It has a pleasant and picturesque situation, partly on a declivity and partly on the border of a large plain. The Adige flows through it in a rapid, full stream, dividing it into two unequal parts, and is crossed by four stone bridges. The form of the city is irregular, its circuit about six miles. It retains its old fortification of a moat and earthen mound, and has two castles on high ground, with a third on the plain. The interior of the city does not correspond with the beauty of its position, most of the streets being narrow and dirty: several, however, are spacious and well paved. The houses are in an antique style, but of good appearance, from the quantity of marble employed in their construction. It contains a Gothic cathedral, ninety-three churches, forty-one convents, eighteen hospitals, a town-house, a museum, a gymnasium, a lyceum, a public library, an academy of painting, also the *academia philarmonica* and the *philoli*, both remarkable for a number of ancient monuments. Some of the churches are noted for their paintings, others for their architecture. The town-house has on the outside niches, containing busts of the distinguished natives of Verona, Pliny the elder, Catullus, Marcus Æmilius, Cornelius Nepos, and Vitruvius. Other distinguished natives are Maffei, Fracastorius, and Paolo Veronese. There are many antiquities in Verona, particularly in the famous collection of Maffei. The most interesting monument of Verona, and one of the most remarkable remains of Roman architecture now existing, is the amphitheatre, said to have been built by Domitian. The arena, in the centre, and of oval form, is 220 feet by 130. The seats rise in forty-six successive ranges from the arena, capable of containing about 22,000 spectators: the outward circumference of the amphitheatre is 1290 feet. The seats, as well as the different passages, the stair-cases and galleries, remain entire, the whole consisting of vast blocks of marble, of two stories. Bartol. Giuliari, in his *Topografia dell' Anfiteatro di Verona* (Verona, 1822), considers the amphitheatre as originally an Etruscan work. (See count Simone Stratico's *Lettera*, and Giuliari's answer.) The *accademia di agricoltura, commercio ed arti* (founded in 1769), publishes *Memorie*, of which the tenth volume appeared in 1824. Verona was, for a time, in the middle ages, free, but, for 170 years, was under the rule of the Scaligers, who were expelled, in 1387, by Galeozzo Visconti, at a later period duke of Milan. After the Viscontis, the Carraras were masters of Verona; and, in 1405, the Venetians conquered it. They retained it until 1796. (See *Cisalpine Republic.*) Shakspeare's Romeo and Juliet is founded upon one of the bloody contests of these families. A sarcophagus is yet shown, called the tomb of Juliet. Carli, in his *Storia di Verona*, and Maffei, in his *Verona illustrata*, have described the antiquities of the city. See also count Bevilacqua Lazise's *Statistica della Città di Verona* (Venice, 1823). The chief manufacture of Verona is silk; but wool and leather are also made here. In 1822, a congress was held here by the principal powers of Europe. The emperors of Austria and Russia, the kings of Prussia, Sardinia and Naples, were personally present. No British minister appeared, because Canning would not acknowledge the right of armed interference in the affairs of Spain. He sent Wellington, however, and the English ambassador at Vienna, to Verona. Chateaubriand and Montmorency appeared for France; Pozzo di Borgo and others for Russia; Hardenberg for Prussia. Prince Metternich presided. Gentz (q. v.) drew up the protocol. So much is known of the deliberations, that the powers permitted France to reëstablish the ancient monarchy in Spain (q. v.) by force of arms, and promised assistance if it should be necessary. But, as England did not take part in the conferences, and constantly advised peace, and the French minister Villèle (q. v.) opposed the strongest arguments to the fanatics who were clamorous for war, and the statesmen, who had gone from Paris to Verona, supported his views, and as Mina had beaten the army of the faith in Catalonia, France attempted at first, in 1822, to induce the cortes, by negotiation, to make a change in their constitution, so as to render it more conformable to the monarchical principle. Respecting the difficulties between Russia and the Porte, it was concluded that lord Strangford, who had been invited for that purpose to Verona, should present an *ultimatum* to the sultan, in which the strictest fulfilment of the treaty of Bucharest (q. v), of 1811, should be demanded, and the Greek insurgents should not receive any assistance. On account of this arrangement, the Greek deputies, who had already arrived in Ancona, were not permitted to proceed any further. Some resolutions were also entered into respecting the Austrian army in Piedmont and Naples; measures were taken for the suppression of secret societies, &c. The monarchs left Verona in October. (See the articles *Laybach*, and *Intervention*.)

Veronica, St. The following is from the *Dictionnaire de Théologie* (Toulouse, 1817), a strictly Catholic work:—"*Véronique* is formed of *vera icon* (true image, that is, of Christ). It is Christ's face imprinted on a kerchief, preserved in St. Peter's, at Rome. Some believe that it is the same kerchief which was put on Christ's face in the tomb, according to John xx, 7: others have persuaded themselves, but without proof, that it is the kerchief with which a holy woman wiped the Savior's face, when he went to mount Calvary, bearing the cross. This opinion may have originated from the circumstance that some painters often represent the *véronique*, or true image, supported by the hands of an angel, and others by the hands of a woman. The first time that this image is mentioned is in a ritual, drawn up in 1143, by Benedict, a canon of St. Peter's. (See P. Mabillon, *Museum Italicum*, vol. ii, p. 222.) The worship paid to this image is paid in reality to the Savior." So far the Dictionary. It does not mention that the legend, every where propagated, calls the holy woman, mentioned above, *St. Veronica*; just as if a saint should be worshipped under the name of *St. Ubes*, the common corruption of *Setubal*.

Verres, Caius Licinius; a Roman who governed the province of Sicily as pretor. The oppression and rapine of which he was guilty, while in office, so offended the Sicilians, that they brought an accusation against him before the Roman senate. Cicero undertook the cause of the Sicilians, and pronounced those celebrated orations which are still extant. The five memorials which bear the name of *secunda actio in Verrem*, were drawn up by Cicero after Verres had abandoned his defence as desperate. Verres was defended by Hortensius; but, as he despaired of the success of his defence, he left Rome, without waiting for his sentence, and lived in great affluence in one of the provinces. He was at last killed by the soldiers of Antony, the triumvir, about twenty-six years after his voluntary exile from the capital.

Verri, count Alexander, an Italian writer, born at Milan, in 1741, died in 1816, entered at first upon the practice of the law; but perceiving the defects of the civil and criminal legislation of his country, he applied himself with great diligence to the study of Grotius, Pufendorf, Montesquieu, and other publicists. In connexion with Carli, Frisi, and Beccaria, he published a periodical work entitled *Il Café*, which had great success. In 1766, he went to Paris with Beccaria, travelled in England, and, returning to Italy, settled himself at Rome, where he wrote two tragedies, Panthea, and the Conspiracy of Milan. His other works are an Essay upon the general History of Italy, from the Foundation of Rome to the present Time; Commentaries and Criticisms upon the principal Grecian Orators; Roman Nights, which has been translated into German, French and English, and frequently reprinted, and a Life of Erostratus.—His brothers *Peter* (born 1728, died 1797) and *Charles* (born 1743, died 1826) also published several valuable works; the former on political economy and legislation, the latter on agricultural subjects.

Versailles, one of the most beautiful cities of France, about ten miles from Paris, lies in an extensive, and, in part, barren plain. Until the middle of the seventeenth century, it was an inconsiderable village, with a hunting castle. Louis XIV determined to erect, on this solitary spot, a royal residence worthy of his age and his grandeur. Seven years (1673—1680) were employed in completing the palace, park and gardens, around which a city, with regular streets and handsome buildings, and a population of 100,000 souls, soon grew up. The palace, erected after the plans and under the inspection of Mansard, is more than 800 feet in length, consisting of a first story and the attic, decorated with Ionic pilasters, with fifteen projecting buildings, supported by isolated columns of the same order. It contains eight magnificent saloons, adorned with statuary, paintings and architectural embellishments, and the great gallery, 232 feet long, thirty broad, and thirty-seven high, and lighted by seventeen great windows. The gallery is indebted to Lebrun for its architecture and paintings, and is not surpassed by any in Europe for magnificence, taste or arrangement. The chapel is one of the most superb monuments of the magnificence of Louis XIV: its external decoration consists of Corinthian pilasters, ornamented with numerous statues; the interior, of the same order, presents twelve fluted pillars, richly ornamented, and sustaining the dome. The banqueting room, the opera-house, &c., are also splendidly finished. The gardens of this sumptuous palace are equal in splendor to the fabric to which they belong. Innumerable statues, temples and pavilions greet the view in every direction, while shrubberies, parterres, sheets of water, and *jets d'eau*, diversify the scenery. Within the circuit of the park lie the two palaces called the *Great* and *Little Trianon*. Versailles was the residence of Louis XIV, XV and XVI, and of all the chief officers of state, until the 6th of October, 1789, when Louis was compelled, by the Paris mob, to take up his residence in the Tuileries. The national assembly also opened its sessions here, and was transferred, at the same time, to Paris. In consequence of this removal of the court and government, Versailles declined as rapidly as it had risen. Napoleon did something towards restoring it, and also caused the palace to be repaired. The treaty of Versailles was signed here, Sept. 3, 1783, between Great Britain, France and Spain, on the same day that the treaty between Great Britain and the U. States of America was signed at Paris. The French court, during the three reigns above mentioned, was styled the *court of Versailles*. The city of Versailles has, at present, a population of 28,000, and is a bishop's see. It contains a town-house, a public library of 30,000 volumes, three churches, and several other public buildings and institutions.

VERSE (from the Latin *vertere*, to turn; hence *versus*, a furrow, line, series, verse). The connexion of several metres or rhythms forms a rhythmical series—a verse which contains as many metrical members or bars as there are uniform arsises in the verse. Verse may also be defined as that form which sounds assume by means of a regular motion and measure, or a series, a whole of rhythms metrically divided. The word is also used for a series of verses, connected according to some rule; but *strophe* is the better expression for this. (See *Strophe*.) Versification is the art of applying the rules according to which verses are formed. Rhythm is not imaginable without time; and as there is even and uneven time (see *Time*), there are three different kinds of *metra*:—1. the spondaic, equal to $\frac{2}{4}$ or $\frac{4}{4}$ time; 2. the molossic, equal to the heavy $\frac{3}{4}$ time; 3. the trochaic, equal to the easy $\frac{6}{8}$ or $\frac{9}{8}$ time. Verses in uneven time are more conformable to the spirit of the ancient languages; those in even time to that of the modern. Formerly verses were measured according to feet, in the Roman fashion (the Greeks measured verses more correctly according to the time or bars), which led to various mistakes. Because a foot is but the form of a single part of the metrical period, the proportionate value of it is the very thing which must be determined by the rhythm or metre, and therefore is to be measured by this, but is not its measure. The grammarians, with whom the *foot* was only an aggregate of syllables, sought, in order to determine the measure, for a fundamental foot, prevailing in the whole verse. As they knew only the difference between long and short syllables, but not the different degrees of length and shortness (which different proportions produce variety of movement), a number of arbitrary and confused notions originated, which were elevated to rules; and thus the rhythm became only the more obscure. If we *measure* verse, however, as the ear requires, musically and according to *time*, we shall find regularly returning metrical periods, and thus determine the melody of the verse, or the metrical music of it; and the prosodic value of syllables is elevated to rhythmical and metrical. Verses have been measured according to feet or double feet (dipodies). The tripodic, above indicated as $\frac{9}{8}$, was unknown; the dactylic, cretic, choriambic, ionic, pæonic and antispastic verses were measured according to feet, so that each was a metre: the anapæstic, trochaic and iambic verses, however, in which a dipody made a metre, were measured by dipodies. If a metre is contained in a verse once, twice, three times, &c., the verse is called *monometer*, *dimeter*, *trimeter*, *tetrameter*, *pentameter*, *hexameter*, &c. As many bars are filled out by the imagination, and not in reality, the division of catalectic, or incomplete, and acatalectic, or complete, verses has arisen. If the verse is concluded in the middle of the period, it is called *brachy-*

catalectic, or half-complete; if it is one syllable too long, it is called *hypercatalectic*. According to the theory of time, these divisions appear unnecessary and erroneous, as every one, who can divide a verse musically, will easily find. In the same way the division of the, so called, *polyschematic* or many-formed verses—verses capable of several forms or changes—appears superfluous; also that of the unconnected verses, which, as is said, cannot be united, and the invention of which is ascribed to Archilochus: These can be measured rhythmically perfectly well. A consistent theory of time reduces all the sorts of verses to one fundamental form, of which there are a variety of modifications. Mr. Apel, a German, has done much to promote a better understanding of the character of verses.—*Blank verse* is a species of verse disencumbered of rhyme, and allowing the lines to run into each other with nearly as much freedom as the Latin hexameter. As it is naturally read with less cadence than rhyme, the pauses in it and the effect of them are not always so sensible to the ear as in rhyme. It is constructed, however, upon the same principles with respect to the place of the pause.

Versification. (See *Verse.*)

Verst, or **Werst**; a Russian measure, equal to about two thirds of an English mile. (See *Measures.*)

Vertebra; the name of the little bones which compose the spine. They are short, thick, angular, twenty-four in number, placed one above the other. Each vertebra has commonly seven processes. The first of these is the *spinous* process, which is placed at the back part of the vertebra, and gives the name of *spine* to the whole of this bony canal. Two others are called *transverse* processes, from their situation with respect to the spine, and are placed on each side of the spinous process. The four others, which are called *oblique* processes, are much smaller than the other three. There are two of these on the upper, and two on the lower part of each vertebra, rising from near the basis of the transverse processes. They are sometimes called *articular* processes, because the two superior processes of one vertebra are articulated with the two inferior processes of the vertebra above it; and they are called *oblique* processes, from their situation with respect to the processes with which they are articulated. These oblique processes are articulated to each other by a species of ginglymus, and each process is covered at its articulation with cartilage. There is in every vertebra a hole large enough to admit a finger. These holes correspond with each other, and form a long bony conduit, for the lodgment of the spinal marrow. Besides this great hole, there are four notches on each side of every vertebra, between the oblique processes and the body of the vertebra. Two of these notches are at the upper, and two at the lower part of the bone. Each of the inferior notches, meeting with one of the superior notches of the vertebra below it, forms a foramen; whilst the superior notches do the same with the inferior notches of the vertebra above it. These four foramina form passages for blood-vessels, and for the nerves that pass out of the spine. The vertebræ are united together by means of a substance, compressible like cork, which forms a kind of partition between them. The change which takes place in these intervertebral cartilages (as they are usually called), in advanced life, occasions the decrease in stature, and the stooping forwards, which are usually to be observed in old people. The cartilages then become shrivelled, and consequently lose, in a great measure, their elasticity. But, besides this gradual effect of old age, these cartilages are subject to a temporary diminution, from the weight of the body in an erect posture; so that people who have been long standing, or who have carried a considerable weight, are found to be shorter than when they have been long in bed. Hence we are taller in the morning than at night. The difference in such cases depends on the age and size of the subject: in tall, young people, it is nearly an inch; but in older or shorter persons, less considerable. Besides these cartilages, there are many strong ligaments, which unite the bones of the spine to each other. Besides the uses of the vertebræ in defending the spinal marrow, and in articulating the several vertebræ, they serve to form a greater surface for the lodgment of muscles, and enable the latter to act more powerfully on the trunk, by affording them a lever of considerable length. In a part of the body that is composed of so great a number of bones, and constructed for such a variety of motion, as the spine is, luxation is more to be expected than fracture; and this is very wisely guarded against, in every direction, by the many processes that are to be found in each vertebra, and by the cartilages, ligaments, and other means of connexion which we have described as uniting them together.

Vertebral Animals. (See *Animals*.)

Vertex is used, in astronomy, for the point of heaven perpendicularly over our heads, properly called the *zenith*.—*Vertical circle*, in astronomy; a great circle of the sphere, passing through the zenith and nadir, and cutting the horizon at right angles: it is otherwise called *azimuth*.—*Vertical prime* is that vertical circle or azimuth which passes through the poles of the meridian, or which is perpendicular to the meridian, and passes through the equinoctial points.—*Vertical plane*, in perspective, is a plane perpendicular to the geometrical plane, passing through the eye, and cutting the perspective plane at right angles.—*Vertical plane*, in conics, is a plane passing through the vertex of the cone, and parallel to any conic section.

Vertot d'Aubœuf, René Aubert de, a French historian, whose works have been translated into English, was born at the castle of Bennetot, in Normandy, of a good family, in 1655. His application to study was early and persevering; but, much against his father's will, he entered among the Capuchins, and took the name of *brother Zachary*. The austerities of his order not agreeing with his health, he was induced to change it for that of the Premonstratenses, and became successively secretary to the general of the order, rector, and, at length, prior of the monastery. After some other changes of situation, he became a secular ecclesiastic, and, in 1701, came to Paris in that character. His talents soon procured him patronage. In 1705, he was made associate of the academy of belles-lettres, and, after a while, secretary of languages to the duke of Orleans. In 1715, the grand master of Malta appointed him his historiegrapher. His last years were passed in much bodily infirmity, from which he was relieved by death, in 1735. He was bordering on his forty-fifth year when he wrote his first history, and had passed his seventieth when he finished his last, that of Malta. His style is lively, pleasing and elegant; his reflections always just, and often profound. He, however, wanted the industry and research which are among the leading requisites of the historian; and he yielded too much to imagination, and depended too much upon memory, to be either accurate or trustworthy. His principal works are, *Histoire des Révolutions de Portugal* (1689); *Histoire des Révolutions de Suède* (1696, 2 vols., 12mo.); *Histoire des Révolutions Romaines* (3 vols., 12mo.); *Histoire de Malthe* (1727, 4 vols., 4to.); *Traité de la Mouvance de Bretagne*; *Histoire Critique de l'Etablissement des Bretons dans les Gaules* (2 vols., 12mo.). He wrote also some dissertations in the Memoirs of the Academy of Belles-lettres, and had much intercourse with the literati of his day. His correspondence with lord Stanhope on the senate of ancient Rome has been published by the historian of Rome, Hooke.

Vertumnus; a deity among the Romans, who borrowed him from the Etrurians: he presided over the spring and orchards. He endeavored to gain the affections of the goddess Pomona; and, to effect this, he assumed the shape and dress of a fisherman, of a soldier, a peasant, a reaper, &c., but all to no purpose, till, under the form of an old woman, he prevailed upon his mistress, and married her. He is generally represented as a young man crowned with flowers, covered up to the waist, and holding in his right hand fruit, and a crown of plenty in his left.

Verulam, Lord. (See *Bacon*.)

Vervain (*verbena*). These plants have usually quadrangular herbaceous stems. Their leaves are opposite: the flowers are generally small, disposed in spikes, which are sometimes arranged in panicles. The calyx is tubular, and five-toothed; the corolla funnel-shaped, dividing into five irregular lobes; the stamens four in number, two of which are shorter than the others: the capsule contains four seeds, which become naked at maturity. The common European vervain (*V. officinalis*) is an ordinary looking weed, naturalized in waste places in some parts of the U. States. It was employed by the ancients in religious ceremonies, and particularly by the Druids. The celebrity which this plant obtained without its possessing one apparent quality, or presenting, by its manner of growth or form, any mysterious character, to arrest the attention or excite imagination, is indeed very extraordinary and unaccountable. Most nations venerated, esteemed and used it. The ancients had their *verbenalia*, at which period the temples and frequented places were strewed and sanctified with vervain: the beasts for sacrifice and the altars were *verbenated*, the one filleted, the other strewed, with the sacred herb; no incantation or lustration was perfect without the aid of this plant. It seems to have had ascribed to it the power of curing bites of rabid animals, arresting the progress of the venom of serpents, reconciling antipathies, conciliating friendships, &c., and was in equal veneration among the priests of Rome and Greece, the Druids of Gaul and Britain, and the magi of India. But it is now regarded as of no value. We have two native species of verbena, of common occurrence in the Northern States, one bearing blue and the other white flowers. Several others are found in the south and west, one of which (*V. aubletia*) has pretty large flowers, somewhat resembling those of a phlox, and is often cultivated as an ornamental plant. An exotic species has flowers of the same size, but of a bright scarlet color.

Verviers; a well-built town in the province of Liege, kingdom of Belgium, lying in the middle of a rich and fertile valley, on the small river Weze, to which it is indebted for its prosperity; lon. 5° 53′ E.; lat. 50° 36′ N.; seventeen miles southeast of Liege. It has been enriched by the sale of its woollen goods, numerous manufactories of which are erected on the Weze. Its population amounts to 16,000 souls.

Vesalius, Andrew, a celebrated surgeon and anatomist, born at Brussels, in 1514, studied the languages and philosophy at Louvain, and at an early age displayed his predominant taste for anatomical inquiries, by dissecting the bodies of animals. He then went to Paris, and studied the medical sciences under James Sylvius. When only eighteen, he composed his treatise *De Corporis humani Fabrica*, and, returning to Louvain, delivered lectures on anatomy. He afterwards visited Italy, and by his lectures and demonstrations at Pisa, Bologna, and other Italian cities, acquired great reputation. In 1537, the government of Venice appointed him professor of anatomy in the university of Padua, where he remained seven years. He was subsequently physician to Charles V, and to Philip II of Spain. When in the height of his fame, he engaged in a pilgrimage to Jerusalem. The motive to this undertaking is thus related: Vesalius, believing a young Spanish nobleman, whom he had attended, to be dead, opened him; but, after making an incision into the body, he perceived the symptoms of life. The parents, coming to the knowledge of this, accused him to the inquisition of impiety. But the king interposed, and saved him, on condition that he would undertake a pilgrimage to the Holy Land. But different motives for this journey have been assigned. On his return from Jerusalem, he was shipwrecked on the island of Zante, and died there, from the effects of hunger and hardship, in 1564. The great work of Vesalius, On the Structure of the human Body, was first published at Basle (1543, fol.); and the second edition, augmented and corrected by the author, appeared in 1555. Many subsequent editions have been printed; but the most accurate and complete is that published at Leyden (1725, 2 vols., fol.), by Boerhaave and Albinus.

Vespasianus, Titus Flavius, emperor of Rome, was born near Rieti, in the country of the Sabines, towards the close of the reign of Augustus. His father was a receiver of taxes in Asia, and, in that generally disreputable office, was distinguished for moderation and integrity. Vespasian displayed but little ambition in his youth; and it was not till the reign of Claudius that he exhibited his military talents. Being then appointed commander of a legion, he acquired great reputation in Germany and in Britain; and, on his return to Rome, he was made consul. In the beginning of Nero's reign, he lived in retirement, but was at length appointed proconsul of Africa; and on the rebellion of the Jews, he was sent with an army into Judea (A. D. 66). After taking some important fortresses, and reducing almost the whole of Galilee to subjection, he was preparing to attack Jerusalem, when he received the news of the death of Nero (A. D. 68). After the transient reigns of Galba, Otho and Vitellius, he was himself elevated to imperial power; and such was his good fortune, that he found himself seated on the throne, without having recourse to those hostilities which he had anticipated as necessary to support his claims. Reaching Rome about the middle of the year 70, he was received with general and sincere rejoicing, the reputation he had acquired promising relief from the miseries of misgovernment, under which the people had long suffered. He did not disappoint the expectations which his character had excited. He reformed the discipline of the army, purified the senatorial and equestrian orders, by degrading the unworthy, and filling their places with respectable citizens, and appointed a commission to settle the vast multitude of suits which had accumulated during the late troubles, besides presiding on the bench frequently himself, that justice might be administered with impartiality. He was an enemy to luxury, and devoid of personal or family pride, being by no means desirous to conceal the obscurity of his origin. On the other hand, he is charged with displaying a degree of meanness and rapacity, in the accumulation of wealth, inconsistent with his character and station. Though this reproach is not destitute of foundation, it appears, however, to be exaggerated; and necessity probably obliged him to have recourse to the means he employed for the exigences of government, after the treasury had been exhausted by the luxury and profusion of his predecessors. Vespasian favored arts, letters and learned men, particularly Quintilian, Pliny and Josephus. He rebuilt a part of the city which had been destroyed during the civil wars, restored the capitol, that had been burnt under Vitellius, with increased splendor, and erected the gigantic amphitheatre, the ruins of which are still celebrated under the name of the *coliseum*. (q. v.) Among the principal public events of the reign of Vespasian are the termination of the dangerous rebellion of the Gauls under Civilis, and the capture of Jerusalem by his son Titus (q. v.), whom the emperor had made his lieutenant in Judea. After reigning ten years, he died, in June, A. D. 79, greatly regretted by the Romans, who, under his dominion, enjoyed a degree of national prosperity to which they had long been strangers.

Vesper (*Latin*); properly, the *evening*: at present, it is generally used to signify the evening service; hence *vesper bell* and *vesper sermon*.—*Vesper image* is a name given to the representation of the Savior's corpse in the arms of his mother.

Vespers, Sicilian. (See *Sicilian Vespers*.)

Vespucci, Amerigo. (See *Americus Vespucius*.)

Vessels, in animal and vegetable physiology; those tubiform passages which serve to conduct liquids to or from certain parts, as the arteries, veins, capillary vessels, and lymphatics. (See *Blood-Vessels*, *Capillary Vessels*, and *Lymph*. For the vessels of plants, see *Plants*.)

Vesta (Greek, *Hestia*); a daughter of Saturn and Rhea, the goddess of fire, and principally of the fire concealed in the earth; or, according to some, wife of Uranus and mother of the gods; in which sense she has been taken for the earth itself, and has been confounded by the earlier writers with Rhea, Ceres, Cybele, Proserpine, Hecate and Tellus. She was at the same time the patroness of chastity, and received permission from her brother Jupiter to remain unmarried. She is said to have first taught man the use of fire for domestic purposes; for which reason the houses, and particularly the entries to them, which usually contained the hearth, were sacred to her; and she is honored as the founder of settled abodes. She is represented as a matron, almost always with a torch in her hand; but the sacrificial flame also distinguishes her. Numa Pompilius built a temple for her in Rome, and introduced the worship of this goddess. Her festival was celebrated on the 9th of June. (For the planet Vesta, see *Planets*.)

Vestals, Vestal Virgins, were the priestesses of Vesta, established by Numa. There were at first four, afterwards six of them. They were not to be more than ten, nor less than six years old, at the time of their consecration: they were to be of good family, and without bodily infirmities; to serve in the temple for thirty years, and keep alive the perpetual fire instituted by Numa; to offer prayers and sacrifices for the good of the state; and at their consecration to take the vow of chastity. If any of them broke this vow, she was doomed to be buried alive. If the one whose duty it was to watch, let the fire go out, she was severely chastised. The vestals had, however, great privileges. They were not under parental government. When they appeared in public, a lictor preceded them. Their persons were inviolable. If they met a criminal doomed to death, they might set him at liberty. When they died, their remains were buried within the town. Their dress was a white garment bordered with purple, and their ornament a band round the forehead. After thirty years' service, they could quit the temple and marry. The oldest of the vestals was called *vestalis maxima*.

Vestris; a family, which, for three generations, has afforded entertainment to the Parisians. The first distinguished dancer of this name was a native of Florence, born in 1728, and called the *dieu de la danse*. To him a great part of Noverre's (q. v.) success was due. Grimm's Correspondence is full of anecdotes of his conceit. Having delighted the public for forty years, he retired, and died in 1808, at the age of eighty. His son, sometimes called *Vestrallard*, as his mother was a dancer named *Allard*, appeared for the first time, in 1772, in the opera of Paris, before he was thirteen years old, and delighted the public until Duport rose. His son also was distinguished as a dancer, and for his conceit.

Vesuvian. (See *Idocrase*.)

Vesuvius; a volcano in Naples, a mile and a quarter distant from the capital. It rises, in the form of a pyramid, out of the plain, and was separated by wide valleys from the mountains of Somma and Ottojano, until the eruption of 1794, when the summit of the mountain sunk, and the valleys were entirely filled up. The height is 3680 feet. After the memorable eruptions in September and November, 1822, Humboldt found the height of the extreme point of the Palo to be 607 toises. Its summit forms a little plain, in the midst of which the crater is seen perpetually smoking. Its sides are mostly barren, but on some parts vines and fruits are seen between fields of burning lava. The base of the mountain, notwithstanding the eruptions of lava, often a quarter of a mile in breadth, is inhabited and cultivated. Here and there grow the grapes from which the costly *Lachrymæ Christi* (q. v.) is made. Amongst the principal eruptions of the volcano are that of 79, in which Herculaneum and Pompeii were buried; those of 203, 472, 512, 685, 993, 1036, 1306, 1631, 1730, by which the summit of the mountain was visibly heightened, and received its sugar-loaf form; those of 1766, 1779, 1794, by which Torre del Greco, a considerable town, was almost entirely destroyed; and that of 1804. Since the commencement of the nineteenth century, scarcely a year has passed without eruptions of more or less importance. The shower of ashes on the 24th of October, 1822, darkened the light of day in Naples, and spread as far as Cassano, 105 Italian miles from Vesuvius. The lava, twelve feet in depth, poured down to the distance of an Italian mile. Vesuvius is steep, and therefore difficult to ascend. Its summit may be reached by three different roads: one is on the north side; one leads from Ottojano, and another from Resina, which is usually taken. The crater of the volcano often changes its form. The gulf is not more than ninety rods in depth. In 1801, eight Frenchmen descended into the crater—an attempt which has been since repeated. (See *Vesuvius during the Years* 1821, 1822, 1823, *with Physical, Mineralogical and Chemical Observations*, by Monticelli and Covelli.) In March, 1828, towards the end of 1831, and in the middle of 1832, there were other eruptions. (See *Volcanoes*.)

Vetch (*vicia*); leguminous plants, with herbaceous stems, often supporting themselves on surrounding objects, by means of the tendrils with which their leaves are terminated. These last are pinnated, and provided with stipules at the base. The flowers are disposed in clusters upon an axillary and more or less elongated peduncle, and are succeeded by pods. In short, the general habit of these plants is precisely similar to that of the pea. Upwards of eighty species are known, most of which inhabit the northern and temperate parts of the eastern continent. Some of these are naturalized in the U. States, and we have besides two or three native species. The common vetch, or tare, is little known in this country, but is extensively cultivated in Europe, and considered a valuable agricultural plant. It is not very delicate as regards the nature of the soil, but succeeds best in dry and warm exposures, and especially in calcareous districts. The crop is cut at the time of flowering, to be given green to cattle; or these are turned into the field to graze. It is an excellent fodder for milch cows and working stock. A second crop is cut when the seeds are nearly ripe, which is dried for winter's use. The seeds are sometimes permitted to ripen, and are given to all kinds of poultry, especially to pigeons, which are often fed on them exclusively.

Veterans, with the Romans; soldiers who had served a number of campaigns, or at least had reached their fiftieth year, so as to be entitled to a discharge. If they, nevertheless, continued in service, they were treated with particular distinction.

Veterinary Art. This, according to the present acceptation of the phrase, comprehends a knowledge of the external form, as well as the internal structure and economy, of the domestic quadrupeds, the appropriate management of them, the nature, causes and treatment of their disorders, and the art of shoeing such of them as may require it. The word is derived from the Latin *veterinarius*, which some of the ancient writers, particularly Columella, use to denote a farrier, horse-doctor, or one who lets horses to hire, its radical being the verb *veho* (to carry); whence *veterinarius* came to signify any thing connected with or relating to beasts of burden. The first veterinary school was instituted in 1762 at Lyons: in 1766, that at Alfort was opened. A similar institution was established at Berlin in 1792, and in the year following, one in London.

Veto (Latin, *I prohibit*); used in English and other modern languages as a substantive, to denote the power, given by law to any individual, to defeat the resolution of a deliberative body. In the former republic of Poland, every member of the diet could, by his *Nie Pozwalam* (I don't permit it), defeat the resolution of the rest. This abuse, called the *liberum veto*, was, in the partition of Poland, supported by Russia as necessary to Polish liberty! The real motive of Russia was, to prevent a union of action among the Poles. The French constituent assembly, in 1789, allowed the king a veto on its resolutions; but the first time that he made use of it, it ruined him. The king of England has a veto upon the resolutions of both houses; but a long period has elapsed since it has been used. The king of the French has a veto. The king of Norway has the same power; but if three successive storthings repeat a resolution, it becomes a law without the king's assent: thus nobility was abolished in Norway. The same provision was introduced into the Spanish government by the constitution of the cortes. The president of the U. States has a veto; but he must return the bill with his reasons; and if, then, two thirds of each house vote for it, it becomes a law.

Veturia. (See *Coriolanus.*)

Viaticum; literally provision for a journey; in Catholic theology, the eucharist administered to patients beyond hope of recovery. Protestants, also, often take the Lord's supper before death, but do not give this name to it.—*Viaticum* is sometimes used as a more delicate name to the aid afforded in money or provisions to a traveller.

Vibration. (See *Acoustics*, and *Pendulum.*)

Vicar (from *vicarius*); representative, vicegerent. (Respecting the vicars of the former German empire, see *German Empire.*) The pope calls himself *vicar of Christ on earth.* An apostolic vicar is a priest of high standing, who has received special powers to decide in certain cases, without asking for instructions. Bishops have grand-vicars, who can discharge most of the functions of the bishops in their dioceses. They cannot, however, grant confirmation, consecrate churches, &c. In England, the vicar is a particular kind of parish priest. The priest of every parish is called *rector*, unless the predial tithes are appropriated, and then he is styled *vicar;* and when rectories are appropriated, vicars are to supply the rector's place. For the maintenance of the vicar, in such cases, there was set apart a certain portion of the tithes, commonly about a third part of the whole, which are now what are called the *vicarial tithes*, the rest being reserved to the use of the appropriators, and, for this reason, termed the *rectorial tithes.* The name of *curate* is given to a clergyman in the church of England, who is employed to perform divine service in the place of the incumbent parson, or vicar. He must be licensed by the bishop, or ordinary. (See *Plurality.*)

Vice, in smithery and other arts, is a machine, or instrument, serving to hold fast any thing worked upon, whether it is to be filed, bent, riveted, &c.—*Vice* is also used in the composition of divers words, to denote the relation of some person that comes instead, or in the place of another; as, *vice*-admiral, *vice*-chancellor, *vice*-chamberlain, *vice*-president, &c., are officers who take the place of admirals, &c.

Vice-Admiral. (See *Admiral.*)

Vicente, Gil (called the Portuguese Plautus), was born at Barcellos, of a good family, about the year 1480. He devoted himself at first to the study of law, but soon abandoned it, for the purpose of cultivating dramatic poetry. As his rank entitled him to admission to court, he contributed to its amusement by writing occasional pieces for all the festivities, and displayed much skill in his compositions. His dramatic pieces were first exhibited at the court of Emanuel, and the first was printed in the year 1504. They were received with great applause; and the reputation of the poet was raised still higher in the reign of John III, who sometimes amused himself with taking part in the performance. Vicente educated his daughter Paula, although she was one of the ladies of honor to the queen Maria, for the stage, and she became distinguished, not only as one of the best performers of her time, but as a poet and a musician. Vicente himself, who, in point of time, preceded all the great dramatic poets of Spain, Italy, France and England, stood alone in that age; and his fame was not confined to his own country. Erasmus is said to have studied Portuguese for the sake of being able to read his comedies. His pieces have all the faults which are inseparable from first essays; but his rude sketches are pervaded by a truly poetical spirit, vigor and richness of invention, truth of nature, ease of style, and harmony of versification, notwithstanding the antiquated structure of the verse, and the obsolete language. The Portuguese and Spanish languages are often intermixed with each other in these pieces, particularly in his *autos.* Vicente died at Evora, in 1557. His works, in five books, appeared at Lisbon, edited by his son Luis, in 1562, fol. (1586, 4to., and often reprinted). Of his *autos*, or religious pieces, there are sixteen; and several of these were printed as early as his seventeenth year. The most celebrated of his tragi comedies is Dom Duardes. Among his comedies, taken mostly from old tales, the Judge of Beyra and the Portuguese Fidalgo are the best. His farces, of which there are eleven contained in the collection above referred to, are witty, lively and natural, and in many respects resemble the Spanish interludes of a later period.

Vicenza, Armand Augustin Louis de Caulaincourt, duke de, lieutenant-general, born at Caulaincourt, in 1773, distinguished himself during the French revolution, both in diplomatic and military capacities, for his integrity, courage, fidelity and address, under the most difficult circumstances. He served in the army from the fifteenth year of his age, but, on the breaking out of the revolution, lost his post of staff-officer, and was for some time confined in prison. He then served (1792) as a grenadier, and afterwards as a mounted chasseur, but, in 1795, was restored, by the influence of Hoche, to his former rank of captain. Caulaincourt served with reputation in Italy, and began his diplomatic career at Constantinople, whither he accompanied general Dubayet. In 1801, he was sent on a diplomatic mission to the emperor Alexander, who always manifested esteem for him, and confidence in him. In 1804, Caulaincourt was named *grand écuyer*, and, about this time, was stationed on the Rhine, where he was employed in counteracting the intrigues of the English agents, and particularly the English minister at Munich, against the life of the first consul. With the capture and execution of the duke d'Enghien, it has been fully proved that he had nothing to do. In 1805, he was made general of division, and received the grand cross of the legion of honor, with the title of duke of Vicenza. He afterwards obtained various orders of knighthood from Bavaria, Saxony, Prussia, Russia and Austria, and was sent ambassador to St. Petersburg, when Napoleon was carrying on his plans against Austria. After the fall of Prussia and the treaty of Tilsit, he was four years ambassador at the Russian court, and received from the emperor the cross of the order of St. Anne, of the first class. He requested his recall on the pretext of ill health, but, in reality, because he met with various mortifications from the Russian nobility, who were jealous of his favor with Alexander. After returning to France in 1811, he accompanied Napoleon on his unfortunate expedition to Russia in 1812, which he had firmly opposed, and returned with him in a sleigh, after nearly perishing with cold. During fourteen days, Caulaincourt did not leave the emperor's side. In the campaign of 1813, Caulaincourt was appointed to negotiate with the Russian and Prussian plenipotentiaries, after the desperate battles of Lützen and Bautzen; and an armistice was the consequence. That armistice was soon broken, and only served to prepare the way for the victory over Napoleon at Leipsic. After hostilities had been removed from Germany to France, Caulaincourt, who had been named minister for foreign affairs, was sent to negotiate with the allies at Chatillon (q. v.); but, on some success of Napoleon, he received orders to raise his claims so high, that the allies broke off the conferences, and marched to Paris. When Napoleon abdicated at Fontainebleau, the duke of Vicenza was the chief negotiator on his part, and signed the treaty of the 11th of April, between the ex-emperor and the allies. He continued to follow his master until his departure from Fontainebleau, on the 20th of April, and afterwards retired to his estate. During the hundred days, he held the portfolio of foreign affairs, and, April 4, 1815, issued the celebrated circular to the foreign cabinets, declaring the pacific intentions of Napoleon. After the second abdication of the emperor, the duke of Vicenza took an active part as member of the regency; but the return of the king terminated his public career. He passed the rest of his life alternately at Paris and on his estate, occupied with the education of his children, and died in 1828.

Vicenza, the principal town of a province or delegation of the same name in the Lombardo-Venetian kingdom, lies in a beautiful and fertile plain on the Bachiglione, which is here navigable, receives the little stream Recone, and divides the town into two parts, connected by four bridges; lon. 11° 33′ E.; lat. 45° 32′ N.; thirty-five miles north-west of Venice; population, 29,000. It contains an old castle, twenty-two churches, and thirty-three oratories, seven colleges, and twenty-seven hospitals and charitable institutions. It is surrounded by a double wall, about five miles in circuit, with six gates. The streets are for the most part narrow and crooked; but there are many handsome buildings here; and, indeed, Vicenza is, in respect to its architecture, the most remarkable city of Upper Italy, being adorned with the works of the celebrated Palladio (q. v.), who was born here. Besides the basilica, we may mention, 1. The town-house (*palazzo della ragione*), situated upon the market-place, a handsome square adorned with columns. This building is entirely of marble, and is unique of its kind. The whole lower story consists of arcades, and the upper story, which is likewise surrounded by a gallery of arcades, is adorned with statues, bassreliefs and cornices. 2. The Olympic theatre is a beautiful building, in the erection of which Palladio not only imitated, but surpassed the ancients, although it is built only of wood. The seats rise one above another in a semicircle, and are adorned with statues of the Roman emperors. 3. The triumphal arches. One of these is at the entrance of the Campus Martius, a beautiful promenade; and the other, at the gate Del Monte, forms the entrance to a stairway of 195 marble steps, leading to the celebrated Servite monastery, called Madonna di Monte Berico, situated upon a hill, which commands a most delightful view. 4. The palace Valmarana. The architects Scamozzi, Otho Calderari, and others, were also natives of Vicenza, and contributed to adorn the city with their works. In most of the churches and palaces there are fine paintings, by Palma, Giordano and others.—See Berti's *Guida per Vicenza* (Venice, 1822).—A part of the inhabitants subsist by silk manufactures, the province producing much of the raw material; and several other manufactures are carried on here. Before the gate of the castle lies the beautiful garden Valmarana. Vicenza has almost always, especially in modern times, shared the fate of its neighbor Verona. (q. v.) In November, 1796, a sanguinary battle was fought near Vicenza, between the French, under general Bonaparte, and the Austrians, under Alvinzi.

Vice-President of the United States. It is provided by the constitution of the U. States that there shall be a vice-president, chosen every four years, in the same manner, and by the same electors, as the president. (See *Electors*, *Congress of the United States*, and *President*.) In case of there being no choice of president, the vice-president acts as president, as in the case of the death, or other constitutional disability, of the president. If no candidate for the vice-presidency has a majority of the electoral votes, it is provided by the constitution that the senate shall choose the vice-president from the two highest numbers on the list of candidates. Two thirds of the whole number of senators are required to form a quorum for this purpose, and a majority of the whole number is necessary to a choice. The vice-president is, *ex officio*, president of the senate.

Vicksburg, one of the principal towns of Mississippi, and capital of Warren county, is situated just below the commencement of the Walnut hills. It has not existed more than ten years, but is now a large village. It is likely to become the rival of Natchez in the cotton trade. Great quantities of cotton are delivered here to the steam-boats which ply regularly between this place and New Orleans. It has a most singular position, on the shelving declivities of high hills, with the houses scattered in groups on the terraces.

Vico, Giovanni Battista, one of the most original thinkers, was born, in 1668 or 1670, at Naples, and was the son of a bookseller. When a boy, he fractured his skull, and did not recover until after three years of suffering. This misfortune seems to have given him a melancholy and contemplative cast. He made great progress in elementary studies, but became disgusted with the study of philosophy, until, at a meeting of the *accademia degl' infuriati*, he saw the scholars sitting by the most distinguished men of the city, which at once kindled his ambition. He studied law, and labored with such assiduity as to injure his health. Being without means of support, he accepted the place of instructer to the nephew of Rocco, bishop of Ischia. He lived nine years in a charming retirement, and read and thought profoundly. Having returned to Naples, he married, and was obliged to accept a professorship of rhetoric, which brought him about $100 a year. When Charles of Bourbon ascended the throne, a better fate seemed to await him, as he was appointed historiographer to the king; but it was too late. Intense studies, by day and night, together with domestic cares, had exhausted his mind: he sunk into idiocy, and died in 1744. Vico was rich in noble and excellent, but also in bold and questionable ideas. Mythology is his leader through the darkness of the past. His chief work is his *Principj di una Scienza Nuova d'intorno alla commune Natura delle Nazioni* (Naples, 1725; 7th ed., Naples, 1817). His ideas respecting Homer and Roman history agree remarkably with many of those of Wolf and Niebuhr. His autobiography has been recently published in the *Opuscoli di Gian Battista Vico raccolti e pubblicati* *da Carlo Antonio Rosa* (Naples, 1818). His *Scienza Nuova* has been translated into German (1822) and French (1827).

Vicq-d'Azyr, Felix; an eminent French physician and anatomist, born at Valogne, in 1748. He went to Paris in 1765, and, after having devoted several years to the study of medicine, and the sciences connected with it, especially anatomy and physiology, he commenced giving lectures on human and comparative anatomy, in 1773. The memoirs in which he gave an account of his discoveries concerning the structure of foreign animals, procured him admission into the academy of sciences in 1774. As perpetual secretary of a medical society at Paris, he wrote the biographical eulogies of many of the members. In 1788, he was made a member of the French academy, and, in 1789, first physician to the queen. He died June 20, 1794. Vicq-d'Azyr, in 1786, commenced the publication of a work entitled *Traité d'Anatomie et de Physiologie* (with colored plates, folio). This part, which is all that appeared, relates only to the brain, with an introductory discourse on anatomy in general. He also wrote part of *Système anatomique des Quadrupèdes* for the *Encyclopédie Méthodique*; a treatise entitled *Médecine des Bêtes à Cornes* (1781, 2 vols., 8vo.), and many medical and anatomical memoirs. His *Eloges Historiques* were published in 1797 and in 1826; and his works appeared in 6 vols., 8vo., with an atlas in 4to. (Paris, 1805).

Victor, Sextus Aurelius, a Roman historian, who lived in the fourth century, was the son of humble parents, and did not enjoy the benefit of a learned education. The place of his birth is not known; but, however obscure his origin, he possessed talents which procured him the highest honors. In the year 361, the emperor Julian appointed him prefect of Pannonia; and, a long time afterwards, he was prefect of Rome, and, in the year 369, consul with Valentinian. He appears to have lived till towards the end of the fourth century. The following works are extant under his name: *Origo Gentis Romanæ; De Viris illustribus Urbis Romæ; De Cæsaribus Historia ab Augusto Octavio usque ad Consulatum decimum Constantii Augusti et Juliani Cæsaris tertium; De Vita et Moribus Imperatorum Romanorum Excerpta, e Cæsare Augusto usque ad Theodosium Imperatorem.* It is thought that the work *De Cæsaribus Historia* can alone be ascribed with certainty to Aurelius. The first edition of Aurelius Victor was printed at Antwerp, 1579, with notes by Schottus. There are several other good editions, of which the latest is the Bipont of 1789.

Victor Amadeus II. (See *Sardinia.*)

Victor Emanuel I. (See *Sardinia*, and *Piedmontese Revolution.*)

Victor, Perrin, duke of Belluno, peer and marshal of France, grand cross of the legion of honor, &c., was born at La Marche, in Lorraine, in 1766, and entered the service, as a drummer, in 1781. He distinguished himself at the siege of Toulon, in 1793, during which he received two wounds; and, after his cure, he passed to the army of the Pyrenees, in which he served with great reputation. He was then employed under Napoleon, in 1796, and was one of the most conspicuous of the French generals. After the treaty of Campo-Formio, general Victor was appointed to the command of the department of La Vendée, and restored tranquillity to that unhappy country, without the use of military means, but solely by the gentleness and wisdom of his measures. In 1799, he returned to Italy, and his division rendered great services in numerous battles. In that of Marengo, he commanded the advanced guard, and sustained the whole efforts of the Austrian army during eight hours, without losing ground, until the main body of the French were in the field. For this gallant conduct, he received a sabre of honor. He afterwards commanded the Batavian army until the treaty of Amiens, when he went to Denmark as ambassador from France. At the battle of Jena, he was wounded. He contributed largely to the victory of Pultusk, and fought with great bravery and success in various battles, during the campaign of 1806. Commanding the first corps of the grand army at the battle of Friedland, he determined the success of that day, and was raised to the dignity of marshal on the field of battle. After the treaty of Tilsit, he was appointed to the government of Prussia, and conciliated the goodwill of the people, by the equity and moderation of his conduct, during the fifteen months that he filled that important office. In 1808, he held a command in Spain, where he added greatly to his military fame. He obtained a victory over the duke del Infantado, at Ucles, and made 15,000 prisoners, and destroyed the army commanded by Cuesta. At the battle of Talavera, his corps displayed singular valor, but he was not sustained in that action; and his skilful and daring march across the Sierra Morena compelled the Spaniards to abandon the fortified pass of Pena-Perros, which laid open all Andalusia to the French. Charged with the investment of Cadiz, he raised works which were proof against all attacks of the English (under Graham) and Spaniards during his command there. He quitted the blockade of that place to take a command in the campaign of Russia, and distinguished himself particularly at the battle of the Beresina. In 1813, he commanded the second corps, which, at the battle of Dresden, carried the left of the allies, and fixed the fortune of the day, making 15,000 Austrians prisoners. He defeated the enemy at Wachau, and sustained his reputation at Leipsic and at Hanau. After the invasion of France by the allies, in 1814, he defended, with unequal forces, the Vosges, foot by foot. Being compelled to fall back before superior numbers, he frequently faced the allies and beat them. At the battle of Brienne, he took the village of that name, guarded by 15,000 Russians and Prussians. On the 9th of February, he retreated upon the Seine, to second the operations of Napoleon, and defended the bridges of Nugent until the 16th. He directed the brilliant affairs of Nangis and Villeneuve, on the 17th, and commanded the advanced guard at the battle of Craonne, on the 7th of March, and was badly wounded. After the restoration of the Bourbons, he received the government of the second military division, at Mezieres, and used his utmost endeavors, on Napoleon's invasion of 1815, to prevent the defection of his troops. Unable to accomplish that object, he quitted Chalons at the very moment when they were preparing for his arrest. After the king's second return, he was named president of the electoral college of the Loir and Cher, peer of France, and major-general of the royal guard. When the marquis of Latour-Maubourg was sent to Constantinople, in 1821, Victor was appointed to succeed him as minister of war; but his wish to obtain the post of major-general in Spain, in 1823, was not gratified, Guilleminot being appointed to that place. But, great complaints being made of the management of the army, Belluno went in person to the army; and, on the 17th of March, the king named him major-general of the army of the Pyrenees. Guilleminot, however, continued to be at the head of the general staff, and Belluno attended only to the subsistence of the army, and has been accused of misconduct in regard to the contracts of Ouvrard and Tourton. (See *Ouvrard.*) After the army had crossed the Bidassoa, Belluno returned to Paris, and was soon after succeeded in the war department by the baron Damas. Since the revolution of 1830, he has been implicated in the plots of the Carlists.

Victoria (with the Greeks, *Nike*); goddess of victory. She was a daughter of the Titan Pallas and Styx, and a sister of Zelos, Cratos and Bia (Courage, Strength, Power). She is generally represented with wings, a laurel on her head, and a palm branch in her hand.

Victoria, Alexandrina, heiress presumptive of the British crown, was born May 24, 1819, and is the daughter of the duke of Kent, by the princess Victoria Maria Louisa, princess-dowager of Leiningen, and sister of the present king of Belgium. (See *Kent.*)

Vicugna. (See *Llama.*)

Vicus; Latin for *village*. From this word are derived the final syllables of *vic*, *wy*, *wick* in Teutonic and French geographical names, as *Longwy*, *Sleswick*, *Viesvic* (old village).

Vida, Mark Jerome; a celebrated modern Latin poet, born in 1490, at Cremona, of parents who were poor, but of noble descent. He studied with distinction at Padua, Bologna and Mantua, and was admitted while young into the congregation of the canons regular of St. Mark. He afterwards went to Rome, and became a canon of St. John Lateran. His talent for Latin poetry recommended him to Leo X, who gave him the priory of St. Silvester, near Tivoli. There he wrote his Christiad, which was finished in the pontificate of Clement VII, who, in recompense of his merit, bestowed on him, in 1532, the bishopric of Alba. Paul III had intended to translate Vida to the see of Cremona; but the death of the pope prevented his promotion, and Vida died at Alba, Sept. 27, 1566. His poetical productions, besides the Christiad, are *Scacchia Ludus* (the Game of Chess), which has been highly praised by Warton; *Poeticorum Libri iii*, translated by the abbé Batteux into French, and published with the Poetics of Aristotle, Horace and Boileau; *Bombycum Libri ii* (On Silk-Worms), esteemed the most correct and elegant of his works; *Hymni de Rebus Divinis; Carminum Liber*. His prose works consist of *Dialogi de Reipublicæ Dignitate Libri ii; Discorsi contra gli Abitanti di Pavia* (Paris, 1562, 8vo.; republished at Venice in 1764, under the title of *Cremonensium Orationes tres adversus Papienses in Controversia Principatus*); and Synodal Constitutions, Letters, &c. Most of these works were published collectively at Padua (1731, 2 vols., 4to.); and his poems have been printed at Cremona (1550, 2 vols., 8vo.), at Oxford (1722, 4 vols., 8vo.; in 1725 and 1733, 3 vols., 8vo.). The Poetics of Vida were translated into English by the rev. Christopher Pitt, and the poem on Chess by George Jeffreys. Vida was one of the first among the Italians of the sixteenth century who attempted, with success, to revive Latin poetry. His versification is harmonious; and it is not to be denied that he possesses poetical talents; yet it must be allowed that he pushed the imitation of Virgil to excess; and it has also been objected to him, that he intermingled too much of heathen mythology with his religious poems.

Vidi (Latin for *I have seen*) is often put with the name of a person under documents, &c., which must be witnessed by the person to give them validity.

Vidonia; a white wine, the produce of the island of Teneriffe, much resembling Madeira, but of a tart flavor, and a quality inferior to the last-mentioned wine. It may become very palatable by age, but never has the fulness of Madeira.

Vienna (German, *Wien*), capital of the Austrian monarchy, one of the oldest cities of Germany, originated, like many others, from a Roman standing camp, established in order to command the Danube. It was called *Vindebona*. In the fifth century, Christianity penetrated to the shores of the Danube, and carried civilization with it. In 791, Austria, and therefore Vienna, came into the possession of Charlemagne, after the conquest of the Huns. Charlemagne erected a church here, with a school, &c. He was in the habit of securing his frontiers by erecting margraviates; and Austria became one of them. Henry, margrave of Austria, in 1141, laid the foundation of the famous St. Stephen's church. Vienna received commercial privileges, and gradually became flourishing. It is situated in lon. 16° 23′ E., lat. 48° 12′ 36″ N., on the southern bank of the Danube. The city rose in importance chiefly from the time when it became the permanent residence of the German emperors. It shows in every part the traces of gradual increase. The city proper is small; but the thirty-four suburbs, which have been, since 1703, surrounded by a wall, make the whole place large. The circumference of the whole is about fourteen miles, including 7462 houses, besides the churches: 1217 of these houses belong to the city itself. The origin of the name is uncertain. The climate is very changeable, and winds frequent: they often make the ground very dry; and, as this contains much gravel, the dust is very annoying. Diseases of the chest, especially of the lungs, are frequent, and probably originate from the prevailing dry and sharp air and the irregular lives of the inhabitants, who are more devoted to pleasure than the people of any other city in Europe. The streets are generally not wide. There are eight large and ten smaller public places. Joseph's place, containing a statue of the emperor Joseph,—a work of no great merit,—is the finest. The palaces are numerous, but, with few exceptions, not in good taste. Even the most recent structures show no improvement in this respect, and there is a remarkable difference, in this particular, between Vienna and Berlin. Much has been done, of late, for the convenience and embellishment of the city. The imperial castle attracts attention more by its extent and antiquity than by beauty or symmetry. Among the fourteen principal churches, that of St. Stephen is the most ancient, largest and most magnificent. Monuments of princes, generals and bishops, interesting pictures, and thirty-eight altars, adorn its interior. Its steeple (452 feet high) is one of the loftiest in Europe; 700 steps lead up to its summit. It offers a beautiful prospect of the environs, which are fertile and picturesque. (See Ziska's *Description of St. Stephen's Church and all its Curiosities*, in German.) The church of the Augustines has been, since 1630, the church of the court: it contains a mausoleum, the work of Canova, erected in 1805, by Albert, duke of Saxe-Teschen, to the memory of his wife. The vault in the church of the Capuchins, at St. Mary, where the imperial family are buried, is historically interesting. Since the time of Matthias, the remains of all the members of the imperial family have been placed here; and therefore Joseph II, to show the foolishness of some noblemen who lived in retirement to avoid mixing with people below them, said, "If I should choose to live like you, with my equals only, I should be obliged to live in the vaults of St. Mary." The Protestants and the members of the Greek church have six chapels, and the Jews a synagogue. There are also fourteen monasteries and three nunneries. The increase of

Vienna appears from the circumstance, that, in 1766, the suburbs contained 3190 houses; at present they contain 6200. The imperial stable, for 400 horses; the Belvedere, formerly the favorite residence of Eugene (q. v.) of Savoy, and which, since 1776, has contained the imperial gallery of paintings; the hospital of invalids, for 800 men; the general hospital, and the barracks, are edifices of vast dimensions. Vienna has 310,000 inhabitants, besides the garrison and foreign residents. In 1815, the number was 239,373. The annual mortality is about one in twenty-six. The high and low nobility form a great contrast. The Germans are the predominating race. Besides these, there are Greeks, Italians, Poles, Servians, Hungarians, Turks, &c. The amount of provisions consumed is very great, comprising, in one year, above 82,500 oxen, 67,000 calves, 120,000 lambs, and 71,500 pigs. The reputation of Vienna for cheapness of living decreases every year. There are 10,000 Protestants, who, though their religion is tolerated, are under some civil disadvantages. Vienna carries on an important commerce, for which the Danube offers great opportunity. About 7000 transport boats annually enter the harbor. The manufactures are important, and give employment to about 60,000 persons, in a great variety of ways. The imperial porcelain manufactory, founded in 1718, employs about 500 persons. The coaches and piano-fortes of Vienna are famous all over the continent. The university of Vienna was founded in 1437. In 1756, it was taken from the Jesuits, and received from Van Swieten, the body physician of Maria Theresa, an entirely new organization. The new university has an anatomical theatre, an observatory, library, botanical garden, &c. The Joseph medico-surgical academy and the veterinary school deserve honorable mention. Vienna has long been famous for the study of medicine, for which the general hospital offers great advantages. 16,000 patients are annually provided for, in 2000 beds; but the medical schools in some other places, as in Berlin, in which a much more scientific spirit exists than is to be found in Austria, are beginning to take the lead of the medical institution of Vienna. The academy of Oriental languages has produced several distinguished diplomatists and scholars. There are three gymnasia, and a polytechnic institute here. In 1821, a Protestant institution was established for the education of young Protestants, as the subjects of Austria have been prohibited to study in foreign universities; but the institution is of a low order. No city has so many public and private libraries, museums, cabinets, galleries, collections, &c. The imperial court library, with a room 240 feet long, ornamented with excellent pictures, and founded by Maximilian I, in 1500, is very extensive, and contains among its treasures several thousand manuscripts and *incunabula* (q. v.), a rich collection of engravings, &c. The whole number of volumes, according to the common statement, is 300,000; but the real number is much less. 15,000 guilders are annually appropriated to it. The other most important libraries are given thus in Malchus's *Statistik* (1826): library of the university, 109,000 volumes; of the Theresianum, 30,000 volumes; of the medico-surgical academy, 45,000 volumes; Convictorium of Löwenberg, 50,000; private library of the emperor, 60,000 volumes; private library of archduke Charles, 60,000 volumes. The imperial mineralogical collection, and the zoölogico-botanical museum, are important. The botanical garden is very flourishing, Francis I being himself fond of botany. The imperial museum of antiquities possesses but few works of great value. The museum of coins is one of the most famous in Europe, and contains 28,000 gold and silver pieces from the time of Charlemagne, besides many of earlier date. The academy of fine arts was founded in 1704. In the imperial gallery are chiefly old German and Italian pictures; also many Titians, Vandycks, Rubenses, &c. The most important pictures have been engraved. The collection in the court library contains about 300,000 wood cuts and engravings, in 800 volumes. Many noblemen have galleries of pictures. Music and the theatre receive great attention. Mozart, Haydn, Beethoven, lived in Vienna. The conservatory, in which fifteen professors instruct 100 pupils in music, is probably equal at present to that of Paris. Among the five theatres, several have actors of great talent. The Italian opera is famous. The popular theatre in the Leopoldstadt is peculiar. Dancing, both on and off the stage, is very much cultivated; and, in general, the inhabitants of Vienna are devoted to pleasure; those of the table being put by no means in the back ground. An establishment for the relief of the poor gives, to about 5000 poor, four to twelve kreutzers daily. There is a lying-in-hospital; and mothers can send their babes from this to the foundling hospital. The deaf and dumb, the blind, poor, sick children and orphans are provided for. Many baths and mineral springs are to be found in the environs. There is a fine swimming school, several military schools, and a garrison, generally 12,000 strong. The most agreeable and most frequented place of recreation is the well-known *Prater*, near the Leopoldstadt. It is a wood, with beautiful views of the neighboring mountains, many *restaurateurs*, and spectacles of various sorts, &c. Persons of all classes are seen here—the emperor and the meanest of his subjects. The train of carriages is often immense, and unequalled by any thing similar in any other place. Not far from the Prater is Augarten, which was opened to the public by Joseph II. Schönbrunn, an imperial pleasure palace, near Vienna, is beautifully situated. Laxenburg is the favorite resort of the emperor. The environs contain several pleasant villages; for instance, Baden, a watering place.—See Pezzl's *Description of Vienna*; *Vienna, its History and Curiosities*, with engravings, an annual periodical begun in 1827, by Hormayr and several other scholars; *Vienna as it is* (Leipsic, 1827).

Congress of Vienna; a meeting of the European powers, from November 1, 1814, to June 10, 1815, to settle the state of affairs after the overthrow of Napoleon. The emperors of Austria and Russia, the kings of Prussia, Denmark, Bavaria, Würtemberg, many grand dukes, sovereign dukes, &c., were personally present, as well as many of the first European politicians and ministers. The papal government was represented by cardinal Consalvi; the Austrian by prince Metternich and baron Wessenberg; the Russian by prince Rasumowski, counts Stackelberg and Nesselrode; the government of Great Britain, by lord Castlereagh, the duke of Wellington, lords Cathcart, Clancarty, Stewart; the Prussian government by prince Hardenberg and baron Humboldt; France by prince Talleyrand, duke Dalberg and others; Bavaria by prince Wrede and count Rechberg; Hanover by count Münster; and ambassadors were present from Spain, Portugal, the Netherlands, Denmark, Sardinia, Naples, &c. Gentz drew up the protocol. The five powers which had concluded the peace of Paris, Austria, Prussia, England, Russia and France, under the presidency of prince Metternich, deliberated on the state of Europe; in some particular cases, Spain, Portugal and Sweden were admitted to their consultations. A committee for the affairs of Germany was formed by Austria, Prussia, Bavaria, Hanover and Wurtemberg, to the deliberations of which also the plenipotentiaries of the other German sovereigns and free cities were subsequently admitted. The settlement of the great variety of interests would have been still more difficult than it was, had not one purpose united all, which was to deprive France of its power of making conquests for the future. Dissensions were several times on the point of breaking out; but Napoleon's return from Elba reunited the discordant powers, and suddenly induced Austria, Great Britain, Prussia, Russia, France, Spain, Portugal and Sweden to sign the act of the congress, consisting of 121 articles, on June 9, 1815. (See *Schöll*.) In these articles, the principle of legitimacy (q. v.) was, in general, adopted as the basis for the restoration of the European political system. Austria received the following territories, part of which had been taken from her:—the newly-created Lombardo-Venetian kingdom (q. v.), with the Valteline, besides three *secundo-geniture*; Tuscany, Modena, Parma, the new kingdom of Illyria, Venetian Dalmatia, with Ragusa and the Golfo di Cattaro; further, by treaties with Bavaria, Tyrol and Vorarlberg, Salzburg, as far as the Salza, with other territories which she had lost in 1809; from Russia, the part of East Gallicia ceded, in 1809, to this power. (Respecting the restorations made to the other states, see the articles on them respectively.) We would only remark here, that Warsaw was given to Russia under the name of the kingdom of Poland; Cracow (q. v.) became a free city; Prussia, whose possessions could not be put on the same footing as before 1806, was indemnified by a part of Poland, the new grand duchy of Posen, half of the kingdom of Saxony, Swedish Pomerania, Cleves and Berg, and the greater part of the left bank of the Rhine as far as the Saar, in order to form a strong barrier against France. Denmark, which had ceded Norway to Sweden, received Saxe-Lauenburg, and, as the possessor of this country and of Holstein, became a member of the German diet. Bavaria received, as a compensation for her cessions to Austria, Würzburg, Aschaffenburg, the Rhenish circles, &c. Hanover received the rank of a kingdom, and several new provinces. Holland and Belgium were formed into the kingdom of the Netherlands, with a fortified frontier on the side of France. The Netherlandish province

Luxemburg was made a grand duchy, and became a member of the German confederacy. Great Britain retained Malta, Heligoland, several conquered colonies (see *Great Britain*), and protective sovereignty over the restored republic of the Ionian Islands. In Switzerland, three more cantons were formed, and it was declared perpetually neutral. The restored kingdom of Sardinia received Genoa as a duchy, with the grant of a free port; and the succession to the throne was secured to the line of Carignan. Tuscany, the duchy of Modena, the States of the Church, and the kingdom of the Two Sicilies, were also restored. Lucca was given to the Spanish Infanta Maria Louisa, but was afterwards otherwise disposed of. (See *Parma*, and *Lucca*.) It was intended that Spain should restore Olivenza to Portugal, which, however, did not take place, as Portuguese troops had occupied Monte Video. June 8, 1815, the act of the Germanic confederacy was signed. It is contained in the act of the congress. (See *Germanic Confederation*.) March 13, 1815, the congress declared Napoleon an outlaw; March 25, 1815, Austria, Russia, Great Britain and Prussia united anew against Napoleon. (See *Napoleon*, and *Russian-German War*.) Sardinia, Portugal, Hanover, Bavaria, Saxony, Würtemberg, the Netherlands, Denmark, Hessia, Baden, &c., joined this alliance, but not Spain nor Sweden. This last war of 1815 decided particularly the Saxon question. England, and even Austria, had agreed that Prussia should have the whole kingdom of Saxony; but the objections of France, of the duke of Saxe-Coburg, the king of Saxony, and, perhaps, most of all, the force of public opinion, induced Metternich to propose the division of Saxony, in January, 1815. Metternich, Talleyrand and Wellington negotiated with the king of Saxony, who had been invited to Presburg. May 18, 1815, he signed the proposed division at Vienna. The abolition of the slave-trade was also a question before the congress (see *Slavery*), and the free navigation of the Elbe, Weser and Rhine, which, however, has been since the subject of long negotiations. (See *Rhine*.) The original of the act was deposited in the archives of the emperor. The founders of this new political system of Europe declared that it should be a free one. But as to a political equilibrium, it was clear that it could not exist whilst Russia, an absolute monarchy, received so dangerous an increase of power by the addition of Poland, and Great Britain was left without a rival on the seas; and as to the freedom of the political system, it may be observed that, in fact, a political aristocracy of the chief powers, originating in the treaty of Chaumont, was confirmed and developed by the congress of Vienna, and continued to operate, as far as respected the continental parties to it, until the French revolution of 1830. (See the articles *Troppau*, *Laybach*, *Verona*, &c., *Intervention*, and *Holy Alliance*.) The holy alliance, though England did not accede to it, and the king of France joined it only in his personal character, was the bold and open annunciation of this aristocracy. At this moment it has been obliged to give up many of its pretensions; but its activity is unabated. Time only can determine what success it will have in future. The political system, as established by the congress of Vienna, has suffered three most important changes, by the separation of Belgium from Holland, the annihilation of the kingdom of Poland, *de facto*, and the decree of the German diet of 1832, by which Prussia and Austria have established a complete dominion over the other states, which. by adopting it, have given up, in fact, the chief attribute of sovereignty. The pope protested against those parts of the act of the congress of Vienna by which he remains deprived of Avignon and Venaissin. The German church was also not restored to her possessions; and the knights of St. John sought for their reëstablishment in vain.

Vienna, Peace of, or *Peace of Schönbrunn*, concluded Oct. 14, 1809. The war between Austria and France, in 1809, had been ended by the battle of Wagram (q. v.), and the armistice of Znaim. (q. v.) Aug. 17, the negotiations began between Champagny and Metternich. The landing of the English on the island of Walcheren induced the Austrians to go on slowly. Sept. 27, prince Lichtenstein went, with full powers, to Schönbrunn, where Napoleon resided, and, Oct. 14, the peace was signed. Austria lost, 1. Salzburg (ceded, with other territories, to Bavaria); 2. Görz, Austrian Friuli, Trieste, Carniola, part of Carinthia, Croatia, on the right bank of the Save, and Dalmatia, of which Napoleon formed the government general of Illyria; 3. the lordship of Räzuns, in the Grisons; 4. some Bohemian enclaves in Upper Lusatia, given to Saxony; 5. the duchy of Warsaw, Western Galicia, with Cracow and Zamosc, and her interest in the salt works of Wieliczka; 6. to Russia, the eastern part of East

Galicia, with 400,000 souls. The peace also confirmed the abolition of the Teutonic order, pronounced by Napoleon, April 24. Austria lost, by this peace, her southern and western military frontier (45,600 square miles, with 3,505,000 inhabitants; see *Military Districts*), and her seaports; yet she was allowed the right of export and import trade in Fiume. She acknowledged Napoleon's arrangements in Spain, Portugal and Italy (where he had declared the papal dominions to be united to France, by a decree dated Schönbrunn, May 17, 1809), and joined the continental system against England. Austria now consisted of 198,000 square miles, with 20,738,000 inhabitants. This peace lasted till August, 1813.—Respecting the war of 1809, see also *Das Heer von Innerösterreich*, and general Pelet's *Mémoires sur la Guerre de* 1809 *en Allemagne*, &c. (Paris, 1824, 2 vols.).

Vienne; the name of a department in France (see *Department*); also of a river and of some towns. Of the latter we mention only *Vienne*, the principal place of a district, in Isere; lon. 4° 54′ E.; lat. 45° 33′ N.; population, 12,300. It contains a fine Gothic cathedral, likewise fourteen churches, a high school, and a museum, and has various manufactures. It is situated on the left side of the Rhone, over which was formerly a stone bridge, built in the year 1265, now destroyed. A Roman colony was established here, and called *Vienna Allobrogum*; and there are still to be seen various remains of its ancient importance, as the ruins of a temple, a theatre, an amphitheatre, aqueducts, &c. In the fifth century, it was taken by the Burgundians, and the kings made it their place of residence. In the ninth century, it was the capital of the kingdom of Provence. It was afterwards erected into an archbishopric, and became the capital of a province called *Viennois*. In 1311, a council was held here under the pontificate of Clement V, by which the order of the Templars was abolished. (See *Clement V.*)

Vierwaldstadtersee, (i. e. the *Lake of the Four Forest Towns*; called also the *Lake of the Four Cantons*); a romantic lake of Switzerland, lying in the cantons of Lucerne, Unterwalden, Uri and Schweitz, and deriving its name from this position. Its length is about twenty-five miles, and its breadth very unequal, as it consists of several detached parts, which form, in a manner, separate lakes, and take their names from the chief places on their banks; thus it is called, in different places, the *lake of Lucerne*, the *lake of Alpnach*, the *lake of Stanz*. and the *lake of Uri*. The waters are clear and of a light green. It contains only one island, called *Altstad*. The environs are among the most beautiful regions of Switzerland. In the neighborhood of Lucerne (q. v.), which seems to rise with its spires out of the waves, the banks are low, and adorned with pretty country seats, villages and orchards. To these succeed valleys, with hamlets built on the sides of the mountains, and solitudes where the rocks sink plumb down to the lake. From its bosom may be counted more than twenty-five mountains, comprising some of the highest summits of the Alps, mount Pilate, Righi, and Furca.

Vigil. This word is derived from the Latin *vigiliæ*, which denoted the watches and guards among the Roman soldiers by night, in contradistinction to the *excubiæ*, who kept guard by day, either in the camp, or at the gates and intrenchments. The proper *vigiliæ* were four, which kept guard successively, three hours each. The four watches took their name from this custom. In the language of the church, *vigil* (in French, *veille*) was at first the evening, and afterwards the whole day, preceding a great festival. This name originated from the circumstance, that the first Christians spent a part of the night preceding such festivals in prayer, to prepare themselves for the coming celebration.—*Vigil* is further used to denote the custom, yet existing among Catholics, to sing or pray in the church the evening before All-Souls day—a custom also sometimes observed the day before the performance of a mass for the dead.—Linnæus gave the name of vigils or watchings to the time of the day when certain flowers open and close their petals.

Vigne. (See *Vineis.*)

Vikingr, or **Sea Kings**, among the Danes or Normans; leaders of piratical squadrons, who passed their lives in roving the seas in search of spoil and adventures. The younger sons of the Scandinavian kings and jarls, having no inheritance but the ocean, naturally collected around their standards the youth of inferior order, who were equally destitute with themselves. These were the same, who, in England and Scotland, under the name of *Danes*, and on the continent under that of *Normans*, at first desolated the maritime coasts, and afterwards penetrated into the interior of countries, and formed permanent settlements in their conquests. (See *Normans.*)

VILLA signified, with the Romans, a country seat, with its appendages. To it belonged three different kinds of houses: the *villa urbana*, where the master lived, the real country seat; *villa rustica*, where the farmer or peasant lived; and the *villa fructuaria*, the barns. Some of these villas, towards the end of the republic, and under the emperors, were real palaces. By degrees, numbers of houses were built around them; and thus the *villages* originated. The word *villa* has passed, with various changes, into all the languages of Western Europe—*ville*, *village*, *weiler*, &c. As the inhabitants of remote villages were not converted to Christianity till after those of cities (see *Pagans*), and as the cultivators of the ground in the middle ages labored under many legal disabilities, we find in many modern languages words derived from *villa*, which express vileness or servitude, as *villenage* and *villain*. Besides, servitude and villany naturally go hand in hand (*cattivo*, in Italian, from *captivus*, a prisoner, means *bad;* and the word for *free* in Dutch also signifies *beautiful*). The modern Italians call the season during which they live in their villas, *villeggiatura*. Some of the modern Italian villas are yet splendid, e. g. the Borghese, Aldobrandini, Estense, and Ludovisi villas, in the neighborhood of Rome. In the times of the Carlovingians, the imperial country residences (see *Charlemagne*) were called *villæ regiæ;* and as many houses grew up around them, the word *ville* may have therefore come to signify, with the French, a *town*.

VILLAGE (see *Villa*), or VILL, in England, is taken sometimes for a manor, and sometimes for a parish, or part of it. In countries where there are peasants, with privileges and obligations distinct from those of the inhabitants of cities and towns, *village* has a legal meaning, denoting a place inhabited by peasants. In the U. States, *village* has received a peculiar signification. In the article *Town*, we have said that towns, or rather townships, are the last divisions of communities in many of the states, so that *village* has no legal meaning; but it is used to indicate that part of a township where most of the houses are collected. A traveller in a town asks the way to the *village*.

VILLANI. There are three Italian historians of this name:—*Giovanni*, a native of Florence, who, having been present at the celebration of the jubilee in Rome in 1300, was induced, by reflecting on the excellent writers who had adorned the history of that city, to contribute in the same manner to the honor of his native place. He accordingly wrote the history of the city of Florence, in twelve books, from its foundation to 1348, when he died of the plague. His narrative extends not only to the events occurring in the other provinces of Italy, but also to other countries through which he had travelled, and with the history of which he had become acquainted. This work is extremely valuable, although it abounds in errors: it deserves full credit wherever the author, whose veracity and honesty are every where visible, speaks as an eyewitness. It is simple and inartificial, but not without interest, on account of its *naïveté* and vigor. After his death, his brother *Matteo* continued the work in a thirteenth book, to 1363, when he also died of the plague. This book treats of contemporaneous events, and is characterized by the same love of truth which is found in the work of Giovanni. In style and manner, Matteo is inferior to his brother, but he has the charm of simplicity and a certain grace of antiquity.—*Filippo*, the son of Matteo, a Florentine citizen, lawyer and judge, was for many years president of Perugia, but finally retired from public life, for the purpose of devoting himself to letters, and wrote, in Latin, a work entitled *De Origine Civitatis Florentinæ et ejusdem Civibus*. The first part is full of fables, and has never been printed. Mazzuchelli had the second part printed in 1747, in an old Italian version, which is superior to the original in elegance and purity of expression, but is inferior in point of accuracy. This work is the first specimen of a native literary history, since most of the persons whose lives are described by Villani are men of letters. His style is lively and vigorous, but sometimes too concise: he often sketches an admirable portrait with a few strokes.

VILLARET, Claude, a French historian, born at Paris about 1715, was intended for the legal profession, but preferred the study of the belles-lettres, and published, in 1743, a novel called *Histoire du Cœur Humain*, and, in 1745, another, *La Belle Allemande*. The derangement of his affairs obliging him to leave Paris, he went, in 1748, to Rouen, where he appeared on the stage, and continued that mode of life till 1756. He then returned to Paris, and, having obtained a financial situation, relinquished his lighter studies, and applied himself to the investigation of the history of his native country. On the death of the abbé Velly in 1759, he was selected to continue the history of France, commenced by that writer, and was, at the same time, made secretary to the peerage. His portion of the work extends from 1329 to 1469, or from the reign of Philip de Valois to that of Louis XI. He also assisted in the *Cours d'Histoire Universelle*, undertaken by Luneau de Boisgermain. His death took place in February, 1766.

Villars, Louis Hector, first marquis, and afterwards duke of, peer and marshal of France, descended from a respectable, but reduced family, was born at Lyons, in 1653. At an early age, he served in the Low Countries, and distinguished himself at the siege of Maestricht (1673), where, as a subaltern officer of cavalry, he made a daring attack, with a detachment of grenadiers, upon an intrenchment, for which he was censured by Louis XIV, under whose eyes it happened, but in such a manner as to redound to his honor. In 1690, he was created *maréchal de camp;* and, in 1700, Louis XIV sent him as ambassador to the imperial court of Vienna, to conduct the negotiations on the subject of the Spanish succession. Villars was, however, recalled in 1701, and, on the breaking out of the war for the Spanish succession, was attached to the army of Italy, where he added to his reputation. The chief command of an army in Germany was next intrusted to him, and, on the 14th of October, 1702, he defeated prince Louis of Baden, who commanded the Austrian forces, and wished to prevent his junction with the elector of Bavaria, at Friedlingen. For this achievement he received the marshal's baton, although, on account of the numerical superiority of the enemy, he did not succeed in effecting his object. In 1703, after a bold and sudden march, he captured Kehl (March 12), which was highly important to the French, on account of its position, and attacked the lines of the prince of Baden, at Stolhofen, though without success, but finally accomplished (May 12) the long-contemplated junction with the elector of Bavaria. An attack was then made by the united forces on the Austrian general count Styrum, near Hochstädt (September 20), and the allies were victorious. Villars was now recalled, at the request of the elector of Bavaria, and employed in reducing to submission the reformers of the Cevennes, known under the name of the *Camisards* (q. v.), in the execution of which charge he endeavored to restore tranquillity by moderate measures, not less than by force of arms. The French arms having suffered many reverses in Germany, the chief command was again given to marshal Villars, who, by his activity, baffled the plans of the prince of Baden, to whom he was inferior in numbers, and compelled him to retreat across the Rhine. In 1707, he forced the lines of Stolhofen (May 23), which were occupied by the German forces, and extorted large sums of money from the inhabitants of Suabia. The finances of France were reduced so low by the expenses of the war, and other causes, that it became impossible to keep on foot an army equal to the allied forces; and marshal Villars was therefore prevented from attempting any great enterprise. In 1709, after some ineffectual attempts towards negotiation, the allies formed the design of laying siege to Mons; and the celebrated battle of Malplaquet (q. v.) was the result of the operations on this occasion (Sept. 11). Villars himself was wounded in the knee in this affair. In 1712, he defeated the Austrians at Denain, forced Eugene to raise the siege of Landrecy, and took several fortresses. In 1713, he penetrated into Germany, and took Landau (Aug. 20), and Freyburg, in the Breisgau (Nov. 16). Louis was now very desirous of peace, and Villars and Eugene entered upon negotiations at Rastadt, which were conducted with the greatest secrecy, and terminated, March 6, 1714, in a peace between Austria and France. (See *Rastadt.*) On the death of Louis, marshal Villars was made member of the regency (1715), and minister of state, and was also admitted into the French academy. A new war between France and Austria, on the subject of the election to the Polish throne, broke out in 1733, and Villars was sent into Italy at the head of an army, with the title of *maréchal-général.* Here, in conjunction with the king of Sardinia, he reduced Milan within three months, and died soon after, at Turin, when on the point of setting out on his return to France, June 17, 1734, at the age of eighty-two years. He was the last great French general of that period. Of the *Mémoires* published under his name, only the first part is from his pen.

Ville (Latin, *villa*), a French word, originally meaning a *country house*, appears in many French geographical names, as *Hauteville*, *Neuville*, &c. *Villaine*, *Villette*, *Vilotte*, &c., are diminutives of *ville*. As there is a great want of names for towns in the U. States, and as *ville* readily admits of composition with other words, it has become common, particularly in the west and south, to make a name for a new settlement, by adding *ville* to some other word, as *Jacksonville*, *Fayetteville*.

Villegas, Estevan Manuel de, a celebrated Anacreontic poet of Spain, was born at Naxera, in Old Castile, in 1595. He studied in Madrid and Salamanca, and not only translated Anacreon and Horace into Spanish verse, but continued to produce original poems in their spirit. In the twenty-third year of his age, he published a collection of his poems, dedicated to king Philip III, under the title of *Eroticas* (Naxera, 1617). He also translated Boëthius in prose and verse (Madrid, 1665), and died in 1669, having devoted his last years chiefly to philology. Villegas ranks among the best lyric poets of Spain. His versification is characterized by a charming ease; and one can only learn to estimate the beauty of the Spanish language from his poems. His *Eroticas* contains his translations from Anacreon and Horace, with forty-four *cantilenas*, elegies, idyls, sonnets, &c. Villegas, according to his own account, labored his poems with the greatest care, having revised his *cantilenas* twenty times, and copied them fourteen times.

Villeggiatura (*Italian*). (See *Villa*.)

Villehardouin, Geoffroy de, an ancient French chronicler, born in 1167, was marshal of Champagne, an office held by his father and descendants. He acted a considerable part in the fourth crusade of 1198, which led to the capture of Constantinople by the French and Venetians, in 1204. Of this expedition, he wrote, or dictated, a narrative, which is extant, in the rude idiom of his age and country. It is interesting from its simplicity and apparent fidelity, and is much referred to by Gibbon in his account of the events which it describes. The best edition is that of Du Cange (folio, 1657).

Villèle, Joseph, count de, French minister of finance, and president of the ministerial council from 1822 to 1827, was born at Toulouse, in 1773, and entered the navy young. After his return from the expedition to St. Domingo, in 1791, he sailed for the East India station under vice-admiral de St. Félix, who, in 1793, was obliged to quit his command and take refuge in the isle of Bourbon, on account of his attachment to royalty. Here Villèle exposed his own life to protect that of his late commander, and continued to reside in the island, where he became a member of the colonial assembly, until 1807. At that time, he returned to France, and lived at Toulouse. In 1814, on the appearance of the royal declaration from St. Ouen (see *Louis XVIII*, and *Charte*), promising the establishment of liberal institutions, Villèle published a pamphlet entitled *Observations sur le Projet de Constitution*, in which he maintained that a representative constitution was dangerous for France, and advised the French to return to the constitution of their fathers. In 1815, he was elected a member of the chamber of deputies (see *Chambre Introuvable*), in which he voted with the extreme right, or anti-constitutional party. This party had lost much of its influence, when the assassination of the duke of Berry, and the new electoral law of 1820, again revived them; and Villèle, who had for several years been a leading speaker in the chamber, was finally raised to the ministry, with his friends Peyronnet (q. v.) and Corbière. The portfolio of the financial department was intrusted to Villèle in December, 1821: the title of count was added in August, and the dignity of president of the ministry in September, of the following year. The friends of constitutional principles were, about this time, exerting themselves in Spain, Portugal, Piedmont and Naples, to support their cause by force of arms; and the ultra-monarchical faction in France was little satisfied with what they called the moderation of the ministry. The invasion of Spain, the law for the prolongation of the term of elections for seven years, the reduction of the *rentes*, the law of indemnification of the emigrants, the establishment of the censorship, and other measures, indicated, however, no such tendency on the part of the ministers. Labourdonnaye, at the head of a part of the right side, and Châteaubriand, though with different views, kept up a vigorous attack upon the ministers. The popular excitement was testified by cries of *A bas les ministres!* uttered by the national guard of Paris on the day of their general review (April 29, 1827), and was increased by the dissolution of that body on the following day. The ministry now determined to convoke a new chamber of deputies, and created seventy-six new peers to secure a majority in the upper house. The elections resulted in the complete defeat of the ministers, who found themselves in a minority in the newly-elected chamber; and, Jan. 4, 1828, they gave in their resignations. (See *Charles X*, and *France*.) Villèle, Peyronnet and Corbière were admitted into the chamber of peers; but the revolution of 1830 rendered all the creations of peers, during the reign of Charles X, void, and M. de Villèle has accordingly lived in retirement since that period.

Villemain, Abel Francois, member of the academy, and, since the revolution of 1830, of the chamber of deputies, was born at Paris, in 1791, and studied with brilliant success. At the age of eighteen, before he had ceased to attend to lessons in rhetoric, he supplied, with high applause, the place of two of the most eminent professors of that art. Appointed, in 1810, professor of belles-lettres at the lyceum of Charlemagne, he discharged his new duties with the same superiority. The new university having restored the custom, which had been abandoned since the revolution, of using Latin harangues at the distribution of the prizes, M. Villemain was the first, in 1811, employed to deliver the discourse on this occasion. He was then a competitor for the prize to be given to the best eulogy on Montaigne, and obtained it. The public beheld with wonder a philosopher like Montaigne appreciated by a writer who had not attained the twenty-second year of his age. In 1814, M. Villemain was appointed professor of modern history in the academy of Paris. His introductory discourse, pronounced before a large and learned assembly, was loudly applauded. The orator presented, within very narrow limits, a faithful and animated picture of the general history of Europe in the fifteenth century. The same year, he bore off the prize of eloquence at the academy. The eulogium of Montesquieu, proposed for the prize of 1816, gained M. Villemain his third academic crown. In the same year, he passed from the chair of modern history to that of eloquence; and his celebrity attended him here also. His lectures were extremely popular; and, with other distinguished professors (Cousin, Guizot, &c.), he was silenced by government, on account of the freedom of his expressions, and the liberality of his views. In 1828, he was permitted to renew his lectures, five volumes of which have been published. Since the revolution of 1830, he has been an active member of the chamber of deputies. The principal publications of Villemain are his *Discours et Mélanges littéraires* (1823); *Vie de Cromwell* (2 vols., 1819); *Nouveaux Mélanges historiques et littéraires* (1827); and his lectures above mentioned, under the title of *Cours de Littérature Française*.

Villenage, Villeins, or Serfs. In every age and country, until comparatively recent times, personal servitude seems to have been the lot of a large portion of mankind. The free citizens of Greece and Rome were absolute masters of the life and property of large numbers of their fellow-beings; and the Germans, in their primitive settlements, were accustomed to the notion of slavery, incurred not only by captivity in war, but by crimes and by debt. (See *Slavery*.) When they invaded the Roman empire, they found the same condition established in its provinces; and thus servitude, under various modifications, became common in modern Europe. There is much difficulty in ascertaining its varieties and stages. Villeins were not, properly speaking, slaves: the mere attachment to the soil, which was their characteristic distinction, might, indeed, be joined to so many privileges, that freedom might be more descriptive of their state than servitude. Thus we find the mere slaves (*servi*) among the Anglo-Saxons, known by the names of *theow*, *esne*, and *thrall*, distinguished in Domesday-book from the villeins. One source of villenage was indeed slavery, the proprietors of large landed estates being accustomed to grant land to their slaves, on condition of their performing certain services. At a later period, free peasants became the villeins of powerful lords, or of the church, for the sake of protection. The villein was not only precluded from selling the land upon which he dwelt, but his person was bound, and the lord might reclaim him if he attempted to stray. The villeins in England were incapable of property, and destitute of redress, except against the most outrageous injuries. The lord could seize whatever they acquired, and could convey them, separately from the land, to a stranger. Their tenure bound them to what were called *villein services*, ignoble in their nature and indeterminate in their degree (see *Tenure*)—the felling of timber, the carrying of manure, the repairing of roads, for their lords, who seem to have possessed an equally unbounded right over their labor and its fruits. This description of persons might, with more strict propriety, be called *serfs*, some of the villeins of France and Germany being bound only to fixed payments and duties towards their lord. The children of the villein could not, without permission of the lord, change the employment to which they were born: they could not marry without his consent, for which they were expected to pay. The children followed the mother's condition, except in England, where they followed the father's. Manumission was practised, as it ever is, where there is slavery, and, as society advanced in Europe, became frequent. It also became usual to allow the villeins to hold property, though this was rather by indulgence than as a matter of right. Some instances of predial servitude occur in England as late as the reign of Elizabeth; but there were no villeins remaining at the time of the abolition of villenage, in 1661. It was not entirely abolished in France until the revolution, though the villeins in the royal domains were emancipated in the fourteenth century. The greater part of the servile classes in some countries of Germany had acquired their liberty before the end of the thirteenth century; but, in other parts, villenage survived till the nineteenth century, and is not yet entirely extinct. It has been recently abolished in Livonia, but still exists in its most servile form in other parts of Russia.

Villers, Charles François Dominique de, a French writer, was a native of Belchen, in Lorraine, where he was born in 1764. In the earlier part of his life, he served in the French army as a lieutenant of artillery, but, on the breaking out of the revolution, emigrated, and joined the royalist force under the prince of Condé. On the failure of the hopes of the party to which he had attached himself, he went to Lübeck, and devoted himself to literary pursuits. Villers, who was a man of considerable talent, and some reading, soon acquired a rising reputation in the republic of letters, which was much increased by his obtaining the prize given by the institute, for an Essay on the Influence of the Reformation, and was at length invited to fill the professor's chair of philosophy at the university of Göttingen. This situation, when the French influence predominated, he was compelled to resign, but received a pension in lieu of it. During the occupation of Hanover by the troops of France, under Davoust, the excesses committed by the soldiery induced him to address a letter to Fanny Beauharnais, with the hope of procuring, through her interest, some mitigation of the evils under which the unhappy country of his adoption then labored. The work was printed; but the only effect it produced was to draw on its author the personal hatred of the French commander. He also addressed to the institute two reports on the state of ancient literature, and on the history of Germany. The honors which his own country denied him were accorded by the Swedish government, which made him a chevalier of the order of the polar star. M. de Villers died in the spring of 1815.

Villiers. (See *Buckingham*.)

Villoison, Jean Baptiste d'Ansse de, a distinguished Hellenist, born at Corbeil-sur-Seine, in 1750, early acquired reputation for his talents and attainments. In the nineteenth year of his age, he had read all the ancient Latin and many Greek authors; and, in a short time, he acquired the Arabic, Syriac and Hebrew without any assistance from others. In the twenty-third year of his age, he was admitted into the academy of inscriptions. In 1778, the government sent him to Venice to examine the manuscripts in the library of St. Mark; and, while there, he enjoyed the society of the learned Morelli, to which intercourse we are indebted for Villoison's *Anecdota Græca e regia Parisiensi et e Veneta S. Marci Bibliothecis deprompta* (Venice, 1781, 2 vols., 4to.). In the library of St. Mark, Villoison discovered an important codex, which contained the Iliad of Homer, with numerous scholia, and which was esteemed of great value by Wolf. This he published under the title *Homeri Ilias ad veteris Codicis Veneti Fidem recensita* (Venice, 1788, fol.). After his return from Italy, Villoison visited Germany, and, in 1785, accompanied the French ambassador Choiseul-Gouffier to Constantinople, and spent three years in travelling in Greece and the Grecian islands. This excursion, during which he became familiar with the Romaic, or modern Greek, led him to undertake the preparation of a complete description of Greece. For this purpose, he made excerpts from the Grecian authors, the church fathers, and the Byzantine writers; but the revolutionary agitations which ensued interrupted the execution of his plan, and he died in 1805, without having accomplished it. Besides the works already mentioned, Villoison published an excellent edition of Longus's *Pastoralia de Daphnide et Chloe* (2 vols., Paris, 1778), and contributed numerous valuable papers to the *Mémoires de l'Académie des Inscriptions*.

Vimeira; a town of Portuguese Estremadura, three miles from Torres Vedras (q. v.), and twenty-eight north-west of Lisbon. It is remarkable for the battle between the British and French (on the 21st of August, 1808), in which the French, under general Junot, were defeated by the English forces, under the command of sir Arthur Wellesley, now duke of Wellington. This battle was followed by the famous convention of Cintra (Aug. 30), by the articles of which the French forces were to be transported to their own country, with their arms and property.

Vinalia (from the Latin); wine feasts among the Romans. The Etruscans, it is said, after a victory gained over the Latins, had made the surrender of all their wine by the latter a condition of peace. The Latins, enraged at this demand, once more determined to try the chance of war; but they promised their wine to Jupiter, if they should be victorious. They conquered; and, to fulfil their vow, they offered him the first cup from every cask. This custom was continued, and the feast was celebrated annually on the 23d of April, on which day the wine-casks were opened. A second wine feast was celebrated on the 21st of August, to pray for Jupiter's favor on the approaching vintage. Till after this festival, the wine of the previous year could not be sold, that of the coming season being consecrated by these festivities, and committed to the protection of Jupiter. At this second festival, the *flamen Dialis* commenced the vintage by gathering the first grape.

Vincennes, the capital of Knox county, Indiana, is situated on the Wabash, 150 miles from its mouth. It was settled in 1735, by the French. It contains the county buildings, an academy, two churches, and some other public buildings, which are erected in good style, and has a population of 1800. Vincennes is contiguous to a beautiful prairie, of which about 5000 acres are cultivated as one field. The houses are furnished with gardens well filled with fruit-trees. Steam-boats come to this place during most of the year.

Vincennes; a town of France, department of the Seine, about three miles east of Paris. It is remarkable for its castle, built in a remote age. It continued a palace during three centuries, but has since been used as a state prison. It is still of considerable strength. It was here that the unfortunate duke d'Enghien was shot on the 21st of March, 1804. Adjoining to the castle is a fine park and forest. Population, 2600.

Vincent, St.; an island in the West Indies, about forty miles in length and ten in breadth. This island was only inhabited by native Caribs, till, in the latter part of the seventeenth century, a ship from Guinea, with a cargo of slaves, was either wrecked or run ashore upon the island of St. Vincent, into the woods and mountains of which great numbers of the negroes escaped, whom the Indians suffered to remain. Partly by the accession of runaway slaves from Barbadoes, and partly by the children they had by the Indian women, the Africans were so much strengthened, that, about the beginning of the eighteenth century, they constrained the Indians to retire into the north-west part of the island. The Indians applied to the French for assistance, and the consequence was a long war between them and the negroes. In 1763, the island being ceded to the English, the first measure of the English government was to dispose of the lands, without any regard to the claims of either race. A war took place, which ended in a compromise, by which the natives, after surrendering part of their lands, were permitted to enjoy the remainder unmolested. On the 19th of June, 1779, St. Vincent was captured by a French force from Martinico. It was restored to Britain at the peace of 1783. St. Vincent contains about 84,000 acres, which are well watered; but the country is generally mountainous and rugged. The valleys, however, are fertile in a high degree, the soil consisting chiefly of a fine mould, composed of sand and clay, well adapted for sugar. Its towns are Kingston, the capital, and Richmond: the others are villages or hamlets, at the several bays and landing-places. Imports, in 1829, £99,891; exports, £414,548. In 1812, St. Vincent was almost desolated by a most dreadful eruption of the Souffrier mountain, which had continued quiet for nearly a century, but from which now issued such a torrent of lava, and such clouds of ashes, as nearly covered the island, and injured the soil in such a manner that it has never recovered. Population, whites, 1301; free people of color, 2824; slaves, 23,589; total, 27,714. Lon. 61° 15′ W.; lat. 13° 17′ N.

Vincent, Cape St.; the south-west point of Portugal, noted for the naval victory gained off it on the 14th of February, 1797, by sir John Jervis, afterwards earl of St. Vincent. (See *Vincent, St.*) Lon. 8° 58′ 39″ W.; lat. 37° 2′ 54″ N.

Vincent, John Jervis, earl of St., a distinguished naval commander, descended of a respectable family in Staffordshire, was born in 1734, and, at the age of fourteen, entered the navy. In 1760, he obtained the rank of post-captain, and commanded the Foudroyant, in the action between admiral Keppel and the French fleet, in July, 1778. In 1782, he took the Pegase, of seventy-four guns; for which exploit he received the red riband. In 1794, he received the command of a squadron equipped for the West Indies, and reduced Martinico, Guadaloupe and St. Lucia. On the 14th of February, 1797, being in command of the Mediterranean fleet of fifteen sail, he defeated twenty-seven Spanish ships of the line off cape St. Vincent, the south-west point of Portugal, and was raised to the English peerage, by the titles of baron Jervis and earl of St. Vincent, with a pension of £3000 a year. In 1799, he was created admiral, and, in 1801, became first lord of the admiralty, and, in 1821, admiral of the fleet. Lord St. Vincent was a man of a strong mind, unbending in regard to discipline and reform, and of high gallantry and genius in his profession. He died in 1823, in his eighty-ninth year. His statue has been erected in St. Paul's cathedral, by vote of parliament.

Vincent, William, a distinguished critic and divine, born in London, in 1739, was educated at Cambridge, where he obtained a fellowship. In 1762, he became an usher at Westminster, and, nine years after, second master. He took the degree of doctor of divinity, and was appointed chaplain in ordinary to the king. In 1788, he became head master at Westminster, where he continued to preside till 1801, when he was made a prebend of Westminster; and, two years after, he succeeded to the deanery. Dean Vincent is principally known by his Commentary on Arrian's Voyage of Nearchus, and his Periplus of the Erythrean Sea, republished together, under the title of the Commerce and Navigation of the Ancients in the Indian Ocean (1807, 2 vols., 4to.). He died in December, 1815. A volume of his Discourses, with his life, was published posthumously.

Vincent de Paul. (See *Paul*.)

Vinci, Leonardo da, the head of the Florentine school of painting, was born in the village of Vinci, near Florence, between 1444 and 1452. He was the natural son of a notary named Pietro. Even in his earliest youth, he devoted himself to a great variety of studies—painting, sculpture, anatomy, architecture, geometry, mechanics, poetry and music. He soon surpassed his master, the painter and sculptor Andrea del Varrochio; and, in 1482, the duke of Milan, Ludovico Maria Sforza, took him into his service. Leonardo founded an academy of design, which would have been still more beneficial in its results but for the fall of the house of Sforza. Amongst the paintings which he executed by order of the duke, the first was the Head of Medusa; and the most famous was the Lord's Supper, in the refectory of the Dominicans of Sta-Maria delle Grazie. It is to be regretted, that this beautiful fresco painting has been entirely destroyed by neglect; but several old copies remain, from which the beauty of the groups of the whole composition and of the separate parts can be estimated. There is an excellent engraving of this painting by Raphael Morghen. Besides his paintings, Leonardo's active spirit undertook many important enterprises. He conducted the water of the Adda to Milan, and excavated a navigable canal from Mortesana to the valleys of Chiavenna and to the Valteline, a distance of 200 Italian miles. In 1499, he returned to Florence, where he was employed to paint one of the walls of the great council room. On this occasion, having Michael Angelo for a competitor, he made a cartoon—which is one of his most celebrated works—commemorating a victory of the Florentines, under their chief Niccolo Piccinio: a group of horsemen in the piece, struggling around a standard, was particularly admired. This cartoon also is known only by a copy. When Leo X ascended the papal throne, in 1513, Leonardo went, in the suite of Julian, duke of Medici, to Rome, but left this city in 1515, and went to France, whither he had been invited by Francis I. His reason for leaving Rome probably was, that the rivalry of Michael Angelo followed him even there, or that Raphael was already intrusted with the execution of the great works in the Vatican. On account of his advanced age, he did little or nothing in France, and, in 1519, he died in the arms of the king, when attempting to rise from his bed on the occasion of a visit from him. Leonardo da Vinci is distinguished as the man who strove to reduce the art of painting, which had been revived by Cimabue (1420), to principles. But few paintings are extant to which he had given the last touches. The reason of this was his restless striving for perfection, even in advanced age. Truth was his aim, and his motto *Vogli sempre quel che tu debbi* (Will always that which thou oughtest). So anxious was he at the beginning of a work, that he would tremble like a stripling. His dissatisfaction with his productions increased with the progress, so that he generally gave them up before they were finished. Among his most distinguished works, besides those already mentioned, are the *Lisa del Giocondo*, in Paris; the lovely picture known by the name of *La Vierge aux Rochers;* a Leda, in the collection of prince Kaunitz, in Vienna; a picture, in the palace Pamfili, in Rome, representing the interview of the child Jesus with the doctors in the temple; John the Baptist, formerly in the French museum; the portrait of duke Ludovico Maria Sforza, in the Dresden gallery; and others. Almost of equal value with the pictures of this immortal artist are his writings, of which, however, part have unfortunately been lost, and others have remained in manuscript. His *Trattato della Pittura* appeared for the first time in 1651: the most complete edition of it was published by Manzi, in 1817. With a deep insight into nature, says Fiorillo, Leonardo has treated, in this book, of light, shades, reflections, and particularly of back-grounds. He perfectly understood, and has explained in the best way, that, natural bodies being mostly bounded by curved lines, which have a certain softness, it is important to give this softness to the outlines; that this can be done only by means of the ground on which the object is represented; that the inner line of the surrounding ground, and the outer line of the object, are one and the same; nay, that the figure of the latter becomes visible only by means of that which surrounds it; that even the colors are dependent on the surrounding objects, and mutually weaken and heighten each other; that when subjects of the same color are to be represented one before the other, different degrees of light must be used to separate them from each other, since the mass of air between the eye and the object lessens and softens the color in proportion to the distance. Besides this treatise, and a *Fragment d'un Traité sur les Mouvements du Corp humain*, nothing has been printed of his writings; but the Ambrosian library, at Milan, possesses sixteen volumes of his manuscripts. Seven other volumes are said to have come into the possession of king Philip of Spain; but not even the nature of their contents is known. Leonardo always carried a little book with him, in which he drew interesting forms and faces which he had an opportunity to observe. Caylus published a collection of beautiful sketches and studies of Leonardo, under the title *Recueil de Têtes de Caractères et de Charges*, &c. (1730), of which there is also a German edition. We should mention, also, *Desseins de Léonardo da Vinci, gravés par Ch. T. Gerli* (Milan, 1784), and *Osservazioni sopra i Disegni di Leonardo dall' Abbate Amoretti* (Milan, 1784). Besides these, there appeared, in 1796, at London, engravings of the numerous sketches of Leonardo in the possession of the king of England, entitled Imitations of Original Designs by Leonardo da Vinci, published by J. Chamberlaine (1796, folio). See, also, the *Life of Leonardo da Vinci* (in German, Halle, 1819).

VINDELICIA; the country of the Vindelicians, a German tribe, which lived, in the time of Augustus, in the south of Germany. Hence Augsburg was called *Augusta Vindelicorum.* After their conquest by the Romans, Tiberius removed most of them from their country.

VINDICTA; revenge, punishment, complaint of injury received; also, with the Romans, the staff with which slaves were touched when they were set free. Hence, in the Pandects, the title *De manumissis vindicta.*

VINE (*vitis*). The common grape (*V. vinifera*) at present grows wild in many parts of the south of Europe, but its origin can be pretty clearly traced to Asia. Its culture has been known and practised from the most remote period of history, though it is certain that it had made little progress in Italy, at the time of the foundation of Rome. A temperate climate is most favorable to its growth. The extreme points at which it is successfully cultivated in the open air, are Schiras, in Persia, in lat. 25°, and Coblentz, in lat. 52°. In northern climates, a south exposure is preferable, unless the summer heats are too powerful; and the reverse in the south. It is not difficult as to the nature of the soil, but succeeds best if it be light, and rather dry than humid. Most of the vineyards in France are in a soil both clayey and calcareous; but excellent wines are produced in granitic and also in volcanic districts, though this does not hold good always. The varieties are innumerable, differing in form and size, color, taste, consistence, fragrance, the size of the seeds and bunches, &c. In planting the varieties known to produce the best wine, it is of importance to select such as arrive at maturity at the same period, otherwise much inconvenience will be experienced. The vine is universally propagated by cuttings, either a foot or more long, with a portion of two years old wood, or short, with only one bud, or one bud and half a joint, &c.

New varieties, however, can only be obtained from seed; and a seedling, carefully treated, will show blossoms in its fourth or fifth year. The diversity of wines, however, appears to depend more on soil, climate, and exposure, than on the particular variety, though this has its influence. The Burgundy, however, may be considered the most general vineyard grape of France, from Champagne to Marseilles and Bordeaux. The best wine in Italy and Spain is also made from grapes of this description; but in both countries, many of the larger-berried sorts are raised, as being more productive of liquor. The sweet wines are made from sweet-berried grapes, allowed to remain on the plants till over ripe. That wine is the strongest, and has most flavor, in which both the skins and stones are bruised and fermented. As a general rule, the varieties most esteemed for wine-making have small berries and bunches, with an austere taste. In certain localities, the vine lives only twenty or thirty years; but under favorable circumstances, it may last several hundred. The time of flowering is a critical moment: heavy rains, drought, or a sudden fall of temperature, at this period, may produce the partial or even total destruction of the vintage. Hail often does great injury, even when the stones are of small size. Most varieties bear only once in the season, some oftener, especially in warm climates. Grapes, when fresh and perfectly ripe, are wholesome, refreshing, and very agreeable to the taste: they are sometimes employed as the sole article of diet. They contain sugar, mucilage, and a little acid. It is remarkable that better dessert grapes are produced in England than in any other part of Europe. The varieties on the continent are few; and the best, as the Muscats and Frontignacs, have been obtained from England. The Chasselas or Muscadine is almost the only eating grape known in the Paris fruit market. England has not only produced the finest varieties, but they acquire a higher flavor there than elsewhere, owing to the perfection of their artificial climates, and the great attention paid to soil and subsoil, and other points of culture. In the south of Europe, grapes are often dried either by the sun or in a furnace, and are known in commerce by the name of *raisins*. Of these there are several sorts, the smallest of which are the raisins of Corinth, more generally known under the name of *currants*. Raisins are sweeter than the fresh fruit, and are served up at desserts throughout the year. A wine may be obtained by fermenting them—a business which is carried on extensively in England. Red wines are made exclusively from red or black grapes, while red or white are used indifferently for white wines. All wines should be kept in cellars, where the temperature is always the same: some improve very much by age. Wine takes the first rank among liquors. The ancients, like the moderns, attached great prices to certain wines. At present, the most esteemed wine is Tokay, which is produced in a limited district in Hungary, and is all reserved for the use of the emperor. Inferior wines, from the same vicinity, are sold in commerce under this name. As late frosts are very apt to injure the vine, notwithstanding that it will bear severe cold in the depth of winter, our climate would seem, *a priori*, to be unfavorable to its culture. It is, however, cultivated for the table in almost every part of the U. States, and the making of good wine in this country is no longer problematical. Wine of the very first quality has been produced in several instances. We have, however, more to hope from some of the varieties of our native grapes, which require less care, and are better adapted to our climate. Some of these have been produced of a very excellent quality, though, hitherto, none equalling the finer varieties of the foreign grape. Our American species of grape are not yet clearly understood.—The fox grape (*V. labrusca*) is found as far north as Quebec. It is distinguished by the large size of the berries, and by having the under surface of the leaves covered with a thick coat of down. The berries are deep blue, have a thick skin, and the central part of the pulp very tough. They are not much esteemed, but it is said that very good wine has been made from them.—The chicken grape (*V. æstivalis*) has the inferior surface of the leaves much less downy than the preceding; and the berries are smaller and much more agreeably tasted. They are brought regularly to the Philadelphia market. We are not aware that this species has been found north of lat. 42°.—The *V. cordifolia*, or *vulpina*, is readily distinguished by having the leaves smooth on both sides. The berries are small and nauseous. It is found as far north as lat. 40°.—The bullet grape (*V. rotundifolia*) has the leaves smaller and more rounded, and the fruit larger, than in our other species. It is found as far north as lat. 39°.—The *V. riparia*, remarkable for its sweet-scented flowers, seems to be more abundant in the Western States than elsewhere. An exquisitely flavored grape is said to grow upon the Arkansas and Red rivers; but late travellers in that region have not been able to discover any species differing from the foregoing; and we are much in want of more certain information on the subject.

VINEGAR (*acetic acid*). This acid is found combined with potash in the juices of a great many plants; particularly the *sambucus nigra*, *galium verum*, and *rhus typhinus*. Sweat, urine, and even fresh milk, contain it. It is frequently generated in the stomachs of dyspeptic patients. Almost all dry vegetable substances, and some animal, subjected in close vessels to a red heat, yield it copiously. It is the result, likewise, of a spontaneous fermentation, to which liquid vegetable and animal matters are subject. Strong acids, as the sulphuric and nitric, develope the acetic by their action on vegetables. It was long supposed that the fermentation which forms vinegar is uniformly preceded by the vinous; but this is now known to be a mistake. Cabbages sour in water, making sour-crout; starch, also, in starch-maker's sour water; and dough itself, without any previous production of wine. The varieties of acetic acids known in commerce are five: 1. wine vinegar; 2. malt vinegar; 3. cider vinegar; 4. sugar vinegar; 5. wood vinegar. We shall describe, first, the mode of making these commercial articles, and then that of extracting the absolute acetic acid of the chemist, either from these vinegars, or directly from chemical compounds, of which it is a constituent. The following is the French method of making vinegar: The wine destined for vinegar is mixed, in a large tun, with a quantity of wine lees; and, the whole being transferred into cloth sacks, placed within a large iron-bound vat, the liquid matter is forced through the sacks by superincumbent pressure. What passes through is put into large casks, set upright, having a small aperture in their top. In these it is exposed to the heat of the sun in summer, or to that of a stove in winter. Fermentation supervenes in a few days. If the heat should then rise too high, it is lowered by cool air, and the addition of fresh wine. In the skilful regulation of the fermentative temperature consists the art of making good wine vinegar. In summer, the process is generally completed in a fortnight: in winter, double the time is requisite. The vinegar is then run off into barrels, which contain several chips of birch wood. In about a fortnight, it is found to be clarified, and is then fit for the market. It must be kept in close casks. In Great Britain, vinegar is usually made from malt. By mashing with hot water, one hundred gallons of wort are extracted, in less than two hours, from one boll of malt. When the liquor has fallen to the temperature of 75° Fahr., four gallons of the barm of beer are added. After thirty-six hours, it is racked off into casks, which are laid on their sides, and exposed, with their bung-holes loosely covered, to the influence of the sun in summer; but in winter, they are arranged in a stove-room. In three months, this vinegar is ready for the manufacture of sugar of lead. To make vinegar for domestic use, however, the process is somewhat different. The above liquor is racked off into casks placed upright, having a false cover, pierced with holes, fixed at about a foot from their bottom. On this a considerable quantity of *rape*, or the refuse from the makers of British wine, or otherwise a quantity of low-priced raisins, is laid. The liquor is turned into another barrel every twenty-four hours, in which time it has begun to grow warm. Sometimes the vinegar is fully fermented, as above, without the rape, which is added towards the end, to communicate flavor. Cider is the principal source of vinegar in the Northern States of North America. The common family method is as follows: The vinegar barrel, in summer, is placed in the garret, or on the sunny side of a building, and in winter in a room where it does not freeze. The refuse cider, already sour, or the daily remnants of the family table, are added to some good vinegar in the barrel, or to the *mother* of vinegar, as it is called. This mother of vinegar is a white or yellowish ropy coagulum, of a mucilaginous appearance, which is formed in the vinegar, and acts as a ferment upon cider not yet thoroughly acidified. The fermentation is often aided by putting into it a piece of dough, or of lean animal muscle, or by adding molasses, or the sugar which falls spontaneously from molasses. In a few weeks, the vinegar will be formed. The vinegar from sugar is made as follows: Ten pounds of sugar are added to eight gallons of water, with yeast and raisins or grape cuttings: for the sake of flavor, and perhaps to assist in the fermentation, twelve pints of bruised gooseberries, or other fruits, are added; and, by a process similar to that for cider, a good vinegar is produced in the course of the summer. Vinegar obtained by the preceding methods has more or less of a brown color, and a peculiar but rather grateful smell. By distillation in glass vessels, the coloring matter, which resides in a mucilage, is separated; but the fragrant odor is generally replaced by an empyreumatic one. Its specific gravity varies from 1.005 to 1.015. A crude vinegar has long been obtained from wood, for the use of the calico printers. It is sometimes known under the name of *pyroligneous acid.* The following arrangement of apparatus is found to answer very well in its preparation. A series of cast-iron cylinders, about four feet diameter and six feet long, are built horizontally in brick-work, so that the flame of one furnace may play round about two cylinders. Both ends project a little from the brick-work. One of them has a disc of cast-iron well fitted and firmly bolted to it, from the centre of which disc an iron tube, about six inches in diameter, proceeds, and enters, at a right angle, the main tube of refrigeration. The diameter of this tube may be from nine to fourteen inches, according to the number of cylinders. The other end of the cylinder is called the mouth of the retort. This is closed by a disc of iron, smeared round its edge with clay-lute, and secured in its place by wedges. The charge of wood for such a cylinder is about eight hundred pounds. The hard woods, oak, ash, birch and beech, are alone used. The heat is kept up during the day-time, and the furnace is allowed to cool during the night. Next morning the door is opened, the charcoal removed, and a new charge of wood is introduced. The average product of crude vinegar, or pyroligneous acid, is thirty-five gallons. It is much contaminated with tar, is of a deep brown color, and has a specific gravity of 1.025. Its total weight is therefore about three hundred pounds. But the residuary charcoal is found to weigh no more than one fifth of the wood employed. Hence nearly one half of the ponderable matter of the wood is dissipated in incondensable gases. The crude acid is rectified by a second distillation, in a copper still, in the body of which about twenty gallons of viscid tarry matter are left from every hundred. After this treatment, it presents the appearance of a transparent, brown vinegar, having a considerable empyreumatic smell, and a specific gravity of 1.013. Its acid powers are superior to those of the best household vinegar, in the proportion of three to two. By redistillation, saturation with quicklime, evaporation of the liquid acetate to dryness, and gentle torrefaction, the empyreumatic matter is so completely dissipated, that, on decomposing the calcareous salt by sulphuric acid, a pure, perfectly colorless, and grateful vinegar rises in distillation. Its strength will be proportional to the concentration of the decomposing acid. The acetic acid of the chemist may be prepared as follows: 1. Two parts of fused acetate of potash, with one of the strongest oil of vitriol, yield, by slow distillation from a glass retort into a refrigerated receiver, concentrated acetic acid. A small portion of sulphurous acid, which contaminates it, may be removed by redistillation from a little acetate of lead. 2. Or four parts of good sugar of lead, with one part of sulphuric acid, treated in the same way, afford a slightly weaker acetic acid. Or, without distillation, if one hundred parts of well-dried acetate of lime be cautiously added to sixty parts of strong sulphuric acid, diluted with five parts of water, and digested for twenty-four hours, and strained, a good acetic acid, sufficiently strong for every ordinary purpose, will be obtained. Acetic acid is composed of

Carbon, ...	46.83
Hydrogen, ...	6.33
Oxygen, ...	46.82

Acetic acid dissolves resins, gum-resins, camphor and essential oils. Its odor is employed in medicine to relieve nervous headache, fainting fits, or sickness occasioned by crowded rooms. In a slightly dilute state, its application has been found to check hemorrhagy from the nostrils. Its anti-contagious powers are now little trusted to. It is very largely used in calico printing. Moderately rectified pyroligneous acid is much employed for the preservation of animal food. Sulphuric acid is sometimes fraudulently mixed with acetic acid and common vinegar, to increase their acidity. This adulteration may be detected by the addition of a little chalk. With pure vinegar, the lime forms a limpid solution, but with sulphuric acid, a white, insoluble gypsum. Muriate of barytes is a still nicer test. British fermented vinegars are allowed by law to contain a little sulphuric acid; but the quantity is frequently exceeded. Copper is discovered in vinegars by supersaturating them with ammonia, when a fine blue color is produced; and lead, by sulphate of soda, hydrosulphurets, and sulphureted hydrogen. None of these should produce any change on genuine vinegar. Salts consisting of the several bases, united in definite proportions to acetic acid, are called *acetates*. They are characterized by the pungent smell of vinegar, which they exhale on the affusion of sulphuric acid, and by their yielding, on distillation in a moderate red heat, a very light, odorous and combustible liquid, called *pyro-acetic spirit*. They are all soluble in water; many of them so much so as to be uncrystallizable. About thirty different acetates have been formed, of which only a very few have been applied to the uses of life.

Vineis, Petrus de, or Pietro delle Vigne, one of the most distinguished jurists and politicians of the thirteenth century, a native of Capua, the son of poor parents, studied in Bologna. Chance made him known to the emperor Frederic II, who soon raised him to the highest offices. He at last became the emperor's chancellor, and as such defended his master, orally and in writing, against the monstrous assumptions of the popes Gregory IX and Innocent IV. The libels of the former were refuted by Vineis with learning and wit; and it was owing in no small degree to his efforts, that the excommunication fulminated against the emperor remained without effect. When Innocent IV, in 1245, cited the emperor before the council of Lyons, Vineis defended his absent master with great ability. Yet, notwithstanding all these services, his enemies succeeded in making the emperor suspect that Vineis had tried to poison him; and he ordered his chancellor to be blinded and thrown into a prison in Pisa, where the unfortunate man put an end to his life, in 1429, by dashing his head against a pillar; on account of which we find him in Dante's Hell among the suicides, relating his mournful story. (*Canto* xiii, *Inferno*.) This is a dark spot in the history of this otherwise great emperor. The writings of Vineis, yet extant, are a treatise *De Potestate imperiali*, and six books of letters on the deeds of Frederic II, mostly in the name of the emperor, and written in bad Latin, which is to be attributed to the low state of learning at that time. They are considered important, as sources of the history of Frederic, and have been several times published.

Vinificateur (*French*); a contrivance recently invented, and used in France and Spain, to improve the spirituous fermentation of wine. During the fermentation, a portion of the ethereal parts of the wine escapes from the open vats. The *vinificateur* is intended to collect these parts, and to convey them back to the must. It is a cap, put on the vat, and surrounded by cold water in a vessel, in order to condense these vapors. The cap is provided with a tube to admit of the escape of the gaseous parts which do not condense.

Vino Tinto. (See *Alicant.*)

Viol, or **Viola**; the generic term of a number of stringed instruments, most of which have gone entirely out of use. The most important viols were, 1. *Viola di gamba* (literally *leg viol*), so called because held between the legs during the performance. It had six strings, tuned thus:—D, G, c, e, a, $\bar{d}$. The notes were written on a system of six lines. 2. *Viola d'amore* (*viole d'amour*), love viol; a kind of triple viol or violin, having seven strings. Originally it had twelve to fourteen strings; six or seven were of catgut, the others of brass. By degrees they were reduced to seven of catgut, tuned thus:—G, e, g, c, $\bar{e}$, $\bar{g}$, $\bar{e}$, or G, c, e, a, $\bar{d}$, $\bar{g}$, $\bar{c}$. 3. *Viola di braccio*, *violetta*, *viola alta* (in French, *taille*), arm viol; an instrument answering to our counter-tenor, treble and fifth violin. It is constructed like the violin, but larger. The notes for this instrument are not written in the G key, but in the alto key. The G or violin key is used in this instrument only for the higher tones, which (e. g. in solos) rise above $\bar{\bar{e}}$ and $\bar{\bar{\bar{f}}}$. It has four strings, of which the two lowest are covered with brass, and the tuning of all is a fifth lower than that of the violin, that is, c, $\bar{g}$, $\bar{d}$, $\bar{a}$; hence the same with that of the violoncello, only one octave higher. It corresponds to alto and tenor in vocal music.

Violet (*viola*). These are favorite flowers in all northern and temperate climates, and many of them are among the first to make their appearance in the spring. The corolla is composed of five unequal petals, of which the inferior one is the largest, and is more or less prolonged into a spur at the base. The roots are mostly perennial; the stem almost wanting in some species, and distinct in others; the leaves are alternate, provided with stipules at the base, and the flowers are disposed on axillary peduncles. More than a hundred species are known. The heart's-ease (*V. tricolor*) is a familiar plant in gardens. We have numerous native violets, some with blue, others with white, and others again with yellow flowers: one has its flowers of two colors, like the heart's-ease, with which it has been confounded.

Violin (Italian, *violino*; French, *violon*) is the most perfect, most agreeable, and most common of all stringed instruments played with the bow. Of its origin little is known; but it seems that it grew out of the ancient *viola*. (q. v.) Some place its invention in the times of the crusades. Probably it was first perfected in Italy, in which country, and the neighboring Tyrol, the finest violins are still produced. Those of Amati, Guarneri and Stradivari, are from the former country; those of Stainer, Klotz, &c., from the latter. The violin now common consists of three chief parts—the neck, the table, and the sound-board. At the side are two apertures, and sometimes a third towards the top. Its bridge, which is below the aperture, bears up the strings, which are fastened to the two extremes of the instrument—at one of them by screws which stretch or loosen them at pleasure. The arrangement is nearly the same, only on different scales, in the viol, violoncello and the double bass. The violin has four catgut strings, of different sizes, of which the largest is wound round with wire. They are tuned thus:—$\bar{g}$, $\bar{d}$, $\bar{\bar{a}}$, $\bar{\bar{e}}$. The $\bar{\bar{e}}$ is also called simply the *quinta*, or *fifth* (in French, *chanterelle*). This string should be about half the thickness of D. The nearer the finger is placed towards the bridge, the quicker become the vibrations, and the higher the tone. Music for the violin is always set in the G key, which, on that account, is called *violin key*. The compass of the good tones of the violin extends from g to about $\bar{\bar{\bar{\bar{a}}}}$. It is only in our days, however, that performers have ascended to this height: formerly, the highest note was $\bar{\bar{\bar{g}}}$ or $\bar{\bar{\bar{a}}}$; and, in the sixteenth century, they hardly rose to $\bar{\bar{c}}$. All the tones comprised in the above compass, nay, even the most delicate enharmonic relations, are produced merely by the playing of the finger on the strings: hence the violin, as well for this reason as for its delightful and penetrating sound, is one of the most perfect and most agreeable instruments. The excellence of a violin consists in its purity and distinctness, strength, and fulness of tone. The art of playing on the violin has been carried to a perfection which it is not probable will be much surpassed, as it already often degenerates into useless artifices. The most esteemed instructions for playing on the violin are those of Löhlein (with additions by Reichardt), Leopold, Mozart, Geminiani, Rode, Kreutzer and Baillot (adopted by the conservatory, q. v., of Paris), Campagnoli, and others. The most celebrated living violin players are Paganini (q. v.), Rode (q. v.), Spohr (q. v.), Lafont, Kreutzer, Viotti (q. v.), Polledro, Lipinski (q. v.), Maurer, Fränzel, Mayseder, Rovelli, Molique, Rolla, Möser, Matthäi, &c.

Violoncello comes between the *viola di braccio* and the double bass, both as to size and tone. It is constructed entirely on the same plan with the violin. (q. v.) The player holds it between his knees. It has four strings of catgut: the two deepest-toned are covered with wire. The tuning is C, G, d, a; hence like that of the *viola di braccio*, only an octave deeper. Its notes are written in the F or bass clef; and it generally accompanies the double bass; but modern composers, as Cherubini, Beethoven, Weber and Spontini, often let the violoncello take an independent part. For tones above $\bar{d}$ and $\bar{e}$, the tenor clef is generally used, or the violin clef, the latter especially for the highest notes in concertos, &c. But in this case the notes must always be written an octave higher, as the violoncello is a whole octave lower than the violin. The violoncello, properly, is but a modification of the old *viola di gamba* (see *Viola*), and has but lately been used as a solo instrument. The inventor of it was Tardieu, a clergyman of Tarascon, at the beginning of the eighteenth century. At first it had five strings, viz. C, G, d, a, $\bar{d}$. In 1725, the $\bar{d}$ was omitted as superfluous. The most distinguished living violoncello players are Romberg (in Berlin), Kraft (in Stuttgart), Merk (in Vienna), Knoop (in Meiningen), Bohrer (in Paris), Dotzauer (Dresden), who have also written for this instrument. Instructions for playing on the violoncello have been written by Baillot, Levasseur, Catel, Baudiot, Alexander, and others. Before the double bass came into use, the violoncello was called *violono*, which name was afterwards given to the former instrument.

Violono (*Italian*; the English *double bass*; in French, *contrebasse*; *violon* signifying, in that language, the violin) is the largest of the bow instruments, and is principally used to sustain the harmony. Some performers, of late, have played solos on it (for example, Hindle, of Vienna, and Dall' Occa, an Italian), but not without some changes, which diminish the strength of its tones. In the Italian orchestra, it still has generally but three strings, by which, however, its compass is too much limited. In Germany, it has generally four, in some places five, strings.

The four strings are tuned thus:—E, A, d, g; and all are an octave deeper than the corresponding ones of the violoncello. (q. v.) As there is necessarily much difficulty in managing this instrument, composers ought not to load it with passages which can be but imperfectly executed.

Viotti, Giovanni Battista, the first violinist of his age, was a Piedmontese, born near Crescentino, in 1755, studied under Pugnani, and, in his twenty-first year, was made first violinist at the royal chapel in Turin. He afterwards visited Berlin and Paris. On the breaking out of the revolution, he took refuge in England, and, from the year 1794 till 1798, had a share in the management of the king's theatre, himself leading in the orchestra. Having received an order from the alien office to quit the country, he retired to Holland, and thence to Hamburg. In 1801, he returned to London, engaged in the wine trade, and lost the whole of his property. After the restoration of the Bourbons, Louis XVIII invited him to preside over the *académie royale de musique* at Paris, which situation he accepted, but did not retain it long, owing to his increasing age and bodily infirmities. In 1822, he settled finally in London, and there remained till his death in the spring of 1824. He was the author of a great variety of music for the violin; but the only two vocal compositions are the polaccas *Che Gioja*, and *Consola, Amato Bene*, both masterpieces in their way.

Viper. (See *Serpent.*)

Virgil. Publius Virgilius Maro, the most distinguished epic, didactic and pastoral poet of ancient Rome, was born at Andes (now *Petiola*), a little village near Mantua, in the year 70 B. C. His father possessed a small estate there, which he cultivated himself. Virgil travelled to Cremona, Milan and Naples for the purpose of improvement, and studied the Epicurean philosophy under a certain Syro. Varus, to whom the sixth eclogue is addressed, was probably his fellow pupil. It has been generally supposed that the poems which bear the inscription *Catalecta Virgilii*, were composed by him at an early age; but modern criticism has shown that some of them are evidently not his, and that others are of uncertain date. If we are to suppose that Virgil describes himself under the character of Tityrus in his first eclogue, he was thirty years of age when he went to Rome for the first time, to obtain the restoration of his farm, which had been taken possession of by the soldiers of Octavius and Antony, after the close of the war against the republicans. He was here presented, by Pollio or some other friend, to Augustus, and gained the favor of Mæcenas, through whose intercession he obtained the restitution of his property. But on his attempting to take possession of it, the new occupants resisted him, and threatened his life; and it was not until after a second journey to Rome, and repeated efforts, that he finally succeeded in his object. About this time, he wrote several eclogues, the tenth and last of which is ascribed to the thirty-third or thirty-fourth year of his age. His Georgics (poem on agriculture), which he undertook at the suggestion of Mæcenas, are said, by grammarians, to have been begun in his thirty-fourth year. He is said to have spent seven years upon this work, which was principally composed at Naples; but these accounts of him are not well authenticated. It is certain that the Æneid is his last work. Virgil was now in high favor with Augustus, with whom he kept up a familiar correspondence. After completing the plan of his great epic, he retired to Greece, with the design of accomplishing it there at his leisure. But Augustus having arrived at Athens, on his return from the East, Virgil determined to accompany him home. At Megara, however, he fell sick; and, his disease becoming aggravated on the journey, he died at Brundusium, or, according to some, at Tarentum, in the fifty-second year of his age, B. C. 19. His body was carried to Naples, in compliance with his directions, and there interred in the Puteolan way. (See *Naples.*) According to well-authenticated accounts, the poet, on his death-bed, ordered the Æneid to be burnt, as an unfinished and defective work; but it was preserved by his friends, in disobedience to his wishes. This circumstance is characteristic of the modesty of Virgil. He was likewise of a mild and gentle disposition, without pretensions in his manners, and constant in his friendship. As a poet, the first place must be assigned to him among the many distinguished authors of his age. If he had not the inventive talent in its highest degree—for in his Eclogues he imitated Theocritus, in his Georgics, Hesiod, and in his Æneid, Homer—yet he deserves our admiration for his command of language, which he displays in all gradations, from the simplest and sweetest strains of the pastoral, to the most splendid and lofty descriptions of the epic; for the beauty of his versification, in which, particularly in georgic poetry, he is unrivalled; and for the taste and skill with which he manages all the materials of poetry. These qualities have always procured him numerous and zealous admirers; and he has found many imitators, both in ancient and modern times. The popular traditions of the middle ages in Italy, represented him as a magician; and his verses were referred to as of prophetic power, in the well-known *sortes Virgilianæ*. Of the editions of Virgil, the most complete is that of Burmann (Amsterdam, 1746, 4 vols. 4to.); the most esteemed for its commentaries and critical apparatus, that of Heyne (8 vols., 8vo., 1793). The most celebrated of the ancient commentators is Servius (A. D. 400), whose commentaries have been published separately, and in the principal editions of the works of Virgil. Of his English translators, the most popular are Dryden, Pitt, Warton and Sotheby, to which is to be added the recent version of John Ring (in 2 vols., 8vo.). The Bucolics and Géorgics have been published separately by professor Martyn, of Cambridge, with an English version in prose, and valuable notes illustrative of the botany, &c. Voss has translated the Georgics into German hexameters, and Delille the Æneid and the Georgics into French verse.

Virgil, Polydore, a historical writer of the sixteenth century, was born at Urbino, in Italy. One of his first productions was a collection of Latin poems, which was followed, in 1499, by his work *De Rerum Inventoribus*, which has been often republished. Pope Alexander VI sent him to England, as collector of the tribute called Peter's pence; and he was the last person who held that office in that country previously to the reformation under Henry VIII. That prince bestowed on him the archdeaconry of Wells, and several other benefices in the church; and, at the request of Henry, he composed a general History of England, from the earliest ages to his own time. This work, which is written in Latin, considered as the production of a foreigner, is highly creditable to his talents; but his reputation has suffered in some degree from the charge of having destroyed memoirs and records which he made use of in his undertaking. The History of Polydore has passed through several editions. He quitted England in the reign of Edward VI, and, going to Italy, died at Urbino in 1555. Besides the works noticed, he was the author of a treatise on Prodigies.

Virgin Islands; a cluster of islands in the West Indies, situated to the east of Porto Rico. They are upwards of twenty in number, but for the most part desert and barren, and extend sixty miles in length, and upwards of thirty-six in breadth; but they are every way dangerous to navigators, though there is a basin in the midst of them of eighteen or twenty miles in length, and nine or twelve in breadth, in which ships may anchor, and be sheltered and landlocked from all winds, and called the *bay of Sir Francis Drake*, from his having passed through it to St. Domingo. The English and Danes divide most of them; but the Spaniards claim those near Porto Rico. Virgin Gorda, Tortola, &c., belong to the English. The Danes possess the islands of St. Thomas, St. Croix, &c.

Virgin Mary. The belief in a god, appearing in a human form, and born of a virgin, is common to several religions of Asia. That Christ was born of a virgin appears from the Old and New Testament; and it was early maintained by theologians, that, in order to become the Savior of the world, he must have been born of a virgin, as he would otherwise have had the stain of original sin. Justin Martyr treats of this necessity (*Dialog*. i, *Tryphone* i, 100). In the fourth century A. D., the doctrine was started, that Mary not only had conceived the Savior in a state of virginity, but had also retained this virgin state during and after his birth, as she had given birth to him *utero clauso*. Jovianus and others opposed this opinion. In the fifth century, this dispute was renewed in the struggle with Eutyches. At length, the continued virginity of Mary, the mother of God, became a doctrine of the orthodox church. Protestants believe in the virginity of Mary, as respects the conception of Christ, because it is explicitly stated in the Bible; but it is not thought irreconcilable with the New Testament, to suppose that, after the birth of Christ, she had several children by Joseph, who are meant by the brothers of Jesus, mentioned in the New Testament. Some critics, however, understand by this phrase merely relatives of Christ. The belief in the virgin Mary, the mother of God, exercised a most important influence during the middle ages. The traces of her worship, of the legends connected with her, and of the deep impression which her idea had made on the minds of men, are visible every where, and particularly in the productions of the fine arts. The adoration of a virgin comported well with the romantic exaltation of the female sex during the age of chivalry. (See the article *Chivalry.*) This adoration lent a glowing fervor to the religion of the middle ages: it afforded an opportunity not only to refine the most romantic feelings of love into those of religion, but to make the adored being the immediate subject of amatory feelings and expressions. Innumerable poems afford proofs of this; but many modern Catholics consider expressions of this kind, which are still retained in religious compositions, as indecorous. Without entering into a discussion respecting the good and the evil which have resulted from the adoration of the Virgin, we would only state the fact, that the feelings with which it inspired the knights, the artists, the poets and the religious of the middle ages, led to the highest exhibitions of prowess, genius and devotion; and the historian will find in it one of the most important keys to the right understanding of the middle ages.

VIRGINIA. (See *Appius Claudius.*)

VIRGINIA, one of the thirteen original states of the American Union, is situated between 36° 31′ and 40° 39′ N. lat., and 6° 35′ W., and 1° 48′ E. lon. from Washington city. It is bounded on the north and north-east by Pennsylvania and Maryland, east by Maryland and the Atlantic, south by North Carolina and Tennessee, and west by Kentucky and the Ohio river, or state of Ohio. According to Mr. Boyes's map, published by state authority, its mean length, from east to west, is 355 miles; its mean breadth, from north to south, 185 miles; and its horizontal area, 65,624 square miles.

Civil Divisions, &c. The state is divided into one hundred and ten counties, whereof sixty-five are situated on the east, and forty-five on the west of the Blue ridge mountains. Adopting the classification under the new constitution, these two great sections may be further subdivided into, 1. the district extending from the sea-coast to the head of tide-water, comprehending thirty-six counties and three towns entitled to representation, to wit, Accomack, &c. &c.; 2. the territory stretching from the head of tide-water to the Blue ridge, containing twenty-nine counties, Albemarle, &c. &c.; 3. the valley district, embracing fifteen counties, between the Blue ridge and Alleghany, Augusta, &c. &c.; 4. the trans-Alleghany counties, thirty in number, viz. Brooke, &c. &c. The principal towns are Richmond, the seat of government, delightfully situated at the falls of James river, containing 16,000 inhabitants; Norfolk, on Elizabeth river, which flows into Hampton roads, population in 1830, 9816; Petersburg and Fredericksburg, at the falls of the Appomattox and Rappahannock rivers, the first containing 8300, and the last 3400 inhabitants; Lynchburg, on James river, 120 miles above the falls, population 4157; and Wheeling, on the Ohio, which, though only the fourth in size and population, containing 5000 inhabitants, is, perhaps, the most flourishing town in the state. Besides these, Winchester, Shepherdstown, Martinsburg, Staunton, Lexington and Fincastle, in the valley, and Charlestown and Abingdon, in the trans-Alleghany district, deserve to be noticed. Williamsburg, in the eastern section, and the ancient seat of government, is on the decline; but Charlottesville, where the state university is situated, has rapidly improved within a few years. The principal rivers flowing into the Chesapeake bay are the Potomac, Rappahannock, York and James, all of which are large and navigable. The Shenandoah traces its quiet course down the valley, at the base of the Blue ridge, and unites with the Potomac at Harper's Ferry. The Roanoke rises in the mountains, and, passing into North Carolina, empties its waters into Albemarle sound; and the Great Kenawha and Monongahela are both tributaries to the Ohio. Besides these, there are numerous streams which intersect the country in every direction, and which render it inferior to few in the facilities of water communication. The Chesapeake bay, one of the finest on the continent, extends 190 miles, from its entrance, through the states of Virginia and Maryland. It is from seven to twenty miles broad, and generally nine fathoms deep.

Face of the Country. The mountains of this state commence about 180 miles from the sea-coast, and run nearly parallel with it, in a south-west direction, disposed in ridges one behind another. The first continuous chain derives, from its deep blue color, the name by which it is distinguished. The North mountains are from twenty to thirty miles farther west; and these are succeeded by the Great Appalachian or Alleghany range, which divides the eastern and western waters, and which Mr. Jefferson calls the spine of the country. The Appalachian system spreads into its widest base in Virginia, and, comprehending its various lateral ridges, occupies a superficies of nearly a hundred miles in breadth. The whole of this breadth, however, is not actually covered by mountains, but embraces many picturesque, salubrious and fertile valleys. The highest points of the Blue ridge are the peaks of Otter, which are seen at a great distance. One of them is remarkable for its symmetry, being cone-shaped, and terminating in a limestone cube, whose upper surface is barely sufficient to contain a dozen persons. It has been supposed that these beautiful peaks are the highest in the state, computed from the base; but the White Top peak of the Iron mountain, near the North Carolina line, is now believed to be still more elevated. The different portions of the state are strikingly distinguished from each other in their appearance. The tide-water, or eastern section, is, in general, low, level, sandy and unproductive, and parts of it exhibit almost as desolate an aspect as the pine barrens of Jersey. Above the falls of the rivers, the outlines of the country are bolder and more picturesque, and the soil, if not generally productive, is in most cases capable of improvement. The alluvial lands, or river and creek bottoms of this section, are very fine; and those of the James river will compare with any in the world for fertility. The valley between the Blue ridge and Alleghany contains a considerable proportion of mountainous and sterile country; but no part of the commonwealth presents larger tracts of fertile and well-cultivated land. West of the Alleghany, a large part of the country must for ever continue in primitive forest. It is generally mountainous and broken, interspersed with fertile valleys, and occasionally presenting rich bodies of limestone land.

Geology and Mineralogy. Tracing a line from the mouth of Potomac creek, by the Bowling Green, and forks of the Pamunkey, to Richmond, thence through Petersburg and Hicksford to the Roanoke near Weldon, we embrace, between it and the ocean, only tertiary and alluvial formations. These contain oxides of iron, shells and marl, bones of sharks, whales and other fish, carbonated wood, and the remains of vegetables. Thence to the Blue ridge, the formation may be regarded as essentially primitive, and presents most of the rocks of this denomination. Two belts of transition and secondary formation have, however, been found resting on the primitive rocks in this distance. One of these is the sandstone and coal formation of the counties of Goochland, Powhatan and Chesterfield, which is supposed to continue through the state in a direction parallel to its mountains; the other, a narrow seam of limestone, which has been found at the base of the South-west mountain, at various points between the Potomac and James rivers, and which yields, in several places where it has been opened, very beautiful marble. In this primitive region, various ores and metals have been discovered; among them, iron ore in layers and masses, black-lead, copper ore and gold. A formation in which this last metal is frequently found, it is now well ascertained, extends from near Fredericksburg, on the Rappahannock, in a south-west direction, through this and the adjoining states. The dip of the rocks in this region is usually about forty-five degrees. West of the Blue ridge, the country may be considered as divided by a line sometimes corresponding with the Alleghany mountains, but in the northern part of the state passing east of them, and south of the head-waters of the Roanoke, stretching along the summits of the Brushy, Clinch and Garden mountains. East of this line, the primitive rocks appear only at the tops of high ridges and mountains, the intervals between, and slopes of the mountain being generally transition, but sometimes secondary formations. Among the rocks of this region are blue and gray limestone, slate, sandstone, conglomerate or pudding-stone, gypsum and buhr-stone. Iron ore, of the best quality, is extensively distributed in this portion of the state, and valuable lead mines are worked in Wythe county, near Austinville. The dip of the rocks in this district is generally less than in the primitive, but sometimes rises to forty-five degrees. West of the line above described lies the great secondary formation of the state. The stratification is more or less undulating, but in general nearly horizontal. This portion of the state abounds in mineral wealth. Bituminous coal and iron ore are found almost every where. Beds of limestone are extensively distributed, and the caverns which abound in them furnish large quantities of nitre; and the salt wells of the Great Kenawha and the Holston are rivalled only by those of Onondaga, in New York, in the strength of their brine. Whenever greater facility of access shall be given to this district of country, it may be confidently predicted that no part of the U. States will present larger rewards to enterprise and industry.

Mineral Waters. The hydro-sulphurous springs of Virginia have been long celebrated. In no part of the world, perhaps, are they surpassed for efficacy, in most of the cases which result from derangement of the liver, and want of function of this organ and the stomach. They are known by the appellation of the White, Salt and Red Sulphur springs, and are situated, the former in the county of Greenbrier, at the foot of the western slope of the Alleghany, and the two last in the county of Monroe. All of them, particularly the White Sulphur, act, when taken in doses of two or three glasses at a time, as an alterative, exercising on the system much of the salutary influence, without the evil effects, of mercury. Used in larger doses, they become actively diuretic and purgative. The White Sulphur is more remarkable for the former, the Salt Sulphur for the latter property. The Red Sulphur, besides the properties which it has in common with the other two, is remarkable for its action on the pulse, which it reduces considerably in a short time. It is this property which makes it so highly valuable in pulmonary affections. None of these waters, it is believed, have been accurately analyzed. The Sweet springs are situated on Pott's creek (a branch of James river), about twenty-two miles east of the Salt Sulphur, and seventeen miles south-east of the White Sulphur spring. They are of the class of waters called *acidulous*, and are valuable as a tonic in cases of debility, and in all the varieties of dyspepsia which are unaccompanied by inflammation. Their temperature is about seventy-three degrees. In the same range of mountains between which the Sweet springs are situated, and from thirty-five to forty miles north-north-east, are the thermal waters, known by the name of the Warm and Hot springs. The bath of the former has a temperature of about ninety-six degrees, the latter about one hundred and twelve degrees. If the hydro-sulphurous waters above described are valuable in hepatic affections and dyspepsia, the Warm and Hot baths are not less so in rheumatic and cutaneous cases. Doctor Bell, in describing these springs, observes: "All that has been performed by the Bristol, Buxton and Bath waters of England, may be safely claimed as of easy fulfilment by the use of the Virginia waters just enumerated. If to these springs, the Sweet, the Warm and the Hot, be added the White Sulphur, the Salt Sulphur and the Red Sulphur, we can safely challenge any district of country of the same extent in the world as that in which these springs are situated, to produce the same number and variety, whether we have regard to their mineral impregnation or temperature; or the use of which shall be attended with more speedy, entire and permanent relief from a host of most distressing maladies." Besides the above mineral waters, there are others, of more or less value, in different parts of Virginia. The springs at Bath, in Berkeley county, have similar properties, with a temperature somewhat higher than the Sweet springs. In Bottetourt, Montgomery and Augusta, are also hydro-sulphurous waters, similar in character to the Sulphur springs of Greenbrier and Monroe, but of less efficacy.

Scenery and Natural Curiosities. The scenery of Virginia is in general highly picturesque. Without possessing the combination of highland and water prospect, which gives such a charm to the shores of the Hudson, or the soft lake scenery of the interior of New York, she, perhaps, surpasses even that picturesque state in the beauty of her valleys and the grandeur of her mountains. The James river valley offers, at many points in the bold outline of its hills, and its broad and fertile lowlands, images which remind the traveller of the rich scenery of the Loire and the Garonne; and the mountains of the state are strikingly distinguished, not only by an ever-varying succession of hill and vale, but by the beauty of their covering, their cheerful growth of oak, chestnut and lynn, contrasting advantageously with that of the mountainous districts of the Northern and Eastern States. The curiosities of Virginia form, to the traveller, objects of still more interest than its scenery. Among them may be enumerated the passage of the Potomac through the Blue ridge, so happily described by Mr. Jefferson, and that of the James river through the same mountain; the cliffs of New river, which present, for a distance of twenty miles, a succession of sublime scenery, rivalled, in our country, only by that of the Niagara, between the falls and Queenstown; the celebrated natural bridge, "the most sublime of nature's works;" the Warm and Hot springs, noticed under the preceding head; the Burning springs of Kenawha, and the extensive and beautiful caverns in the limestone districts of the state. Among these last is one of surpassing interest and beauty: it is denominated Weyer's cave, from its discoverer, and is situated in the county of Augusta, near the little village of Port Republic. The description given by Goldsmith of the grotto of Antiparos, seems almost literally to apply to this interesting work of nature, which presents, for a distance of half a mile, a series of apartments, some of them of great extent and majestic height, incrusted with crystals, and glittering with the most beautiful stalactites. We feel, in traversing them, as if we were visiting one of those enchanted palaces, in which the knights of chivalry were spell-bound, or gazing on one of the scenes so vividly portrayed in the Arabian tales. A cave on Jackson's river, near Covington, is said to be much more extensive and intricate, though perhaps not so beautiful, as that just mentioned. There is also a natural bridge in the south-west part of the state, which bears no comparison, in grace of proportion, or grandeur of effect, to the one in Rockbridge. In Hampshire county there is an ice mountain, which is very remarkable. On its north-west side, the surface is covered by loose rocks, which being removed to the depth of about three feet, presents an abundance of ice at all seasons of the year. The most noted cataract in the state is that of the Falling spring, in the county of Alleghany. The stream is of sufficient volume, a few yards from its source, to turn a mill-wheel; and about a mile below it has a perpendicular descent of 200 feet, down a precipice of calcareous rock. Before it reaches the bottom, it is almost converted into vapor, and the temperature is much reduced. The stream unites with Jackson's river, about two miles below the cataract. The lake in Giles county not having been embraced in any written account of the state, deserves to be noticed. It presents the curious spectacle of a beautiful sheet of water, a mile and a half in circumference, and a hundred fathoms deep, on the summit of a lofty mountain. Some of the aged people in the neighborhood remember when its bottom was a spot of marshy ground, covered with oak and pine, and much frequented by deer and elk, in pursuit, as was supposed, of salt. In process of time, a small pond was formed in the centre, increasing slowly at first, until a stream, which had its source high in the mountain, suddenly ceased to flow. Afterwards, the lake rose rapidly, and, covering the highest trees, finally ascended to the mountain top, where it overflows at a single point below the general level. The water is not saline, as is generally supposed, but pure and potable. It abounds in lizards, but no fish have been discovered. The idea which prevails of its alternate rise and fall is erroneous. This lake is 3700 feet above the level of the ocean. Lake Drummond, in the Dismal swamp, is about seven miles in extent, and about twenty-four feet above tide-water. Its waters are cool, strongly tinged with juniper, and pleasant and wholesome to drink. If our limits allowed, the ebbing and flowing springs of Washington county, and Cow-pasture valley, the carved or calico rock of Kenawha, and various other curiosities in the state, would merit particular description.

Internal Improvements. The Virginians are said to be privileged to have bad roads. Supposing such a privilege to exist, they have certainly availed themselves of it largely. In none of the Atlantic states, in proportion to their extent and population, has so little been done to improve the common highways of the country. To improvements of a higher class, the people and their public agents have not been indifferent. Two highly valuable canals have been constructed, and are now in successful operation. One of these, the Dismal swamp canal, is twenty-two and a half miles long by sixty feet wide, and seven feet deep, and connects the navigable waters of the Chesapeake bay with those of Albemarle sound. The other, the James river canal, extends from Richmond, about thirty miles up the James river valley. This work is among the best executed of our country, and will probably be extended, in a few years, to Lynchburg, and perhaps to the foot of the Alleghany, whence a rail-road of 140 miles in length would connect the canal with steam-boat navigation on the Kenawha. Besides these, there are several other canals of less extent. Among them are the Blue ridge canal, about seven miles long and thirty feet wide, overcoming a fall of one hundred feet in the river; the Roanoke canal, a work of the same extent, around the falls of the Roanoke; and the Appomattox and Rappahannock canals, similar works near Petersburg and Fredericksburg. Rail-roads, though of but late introduction in the U. States, have attracted considerable attention in Virginia. One of these has been lately executed near Richmond, the results of which are more brilliant, in proportion to its extent, than those of any similar work in the Union. It is about thirteen miles long, and connects the coal mines of Chesterfield with tide-water. The whole capital invested in it, including cars for transportation, stables and horses, was $150,000. The trade on it is already fifty thousand tons per annum, and the receipts for transportation during the present year will, it is understood, be about $70,000. The stock is, of course, largely above par. A second rail-road, of greater extent, is now in active progress between Petersburg and the Roanoke. It will be sixty miles long, and will connect, when completed, the Roanoke navigation with the town of Petersburg. The first thirty-five miles of this improvement will be in operation in the course of the present year (1832), and the whole work will be completed by the beginning of 1834. Other rail-roads are proposed, and will probably soon be executed. In 1816, the legislature created a "fund for internal improvement," the capital of which, in 1831, amounted to $1,500,000, and the revenue of the year to about $90,000. Out of the annual income, the state contributes, in aid of valuable improvements, two fifths of the capital stock, leaving the residue to individual subscription. The great line of improvement between James river and Kenawha has been managed exclusively by state authority since 1820; but the last general assembly (1831—2) incorporated a joint-stock company, with a capital of $5,000,000 (the state taking two fifths), and gave it ample powers to establish a more perfect communication, by continued canals and rail-ways, between the waters of the James and the Ohio. If the scheme should be successful, its influence upon the future destinies of the state will be incalculable. But it would lengthen this article too far to point out the many natural advantages of Virginia, and her many facilities for developing them. It seems to be always the wise economy of nature to leave something to be effected by the industry and enterprise of man. When these shall have developed, to their full extent, the resources of this state, it may be confidently anticipated that she will rival the most flourishing of her sisters in wealth and prosperity.

Agriculture, Manufactures, &c. The agriculture of this state is various, but, for the most part, badly conducted. The old practice of clearing and cultivating land every year until exhausted, then turning it out to recover from its own resources, still continues in many places. In others, the *three-shift* system prevails; that is, 1. a crop of Indian corn; 2. wheat, rye or oats; 3. the year of *rest*, as it is called, in which the spontaneous vegetation furnishes a scanty subsistence to stock; after which the soil is again subjected to the scourging process of cropping, while little attention is paid to the application of manures, or the culture of artificial grasses. This destructive system, for the most part, prevails from the sea-board to the head of tide-water, and on the south side of James river as far as the Blue ridge. On the north side of that river, cultivation is better, particularly in the counties approaching the Potomac. Rotations of crops are attended to; grass-seeds, most commonly red clover (*trifolium pratense*) are sown on the small grain; and animal and vegetable manures are saved with care, and judiciously applied. Gypsum is also used, and with powerful effect. In the Valley district, agriculture is also well conducted; and irrigated meadows are abundant and productive. On both sides of the Blue ridge, maize, or Indian corn, wheat, rye, oats and buckwheat are the principal grain crops. Tobacco is extensively cultivated in Eastern Virginia, but sparingly in the Valley, and that chiefly in its southern portion. The grass-seeds common to both regions are red clover (*trifolium pratense*), orchard grass (*dactylis glomerata*), timothy (*phleum pratense*) and herd-grass (*alopecurus pratensis*), the two former on dry, the latter on moist soils. In the eastern and southern districts, cotton is planted to some extent. On the shores of the Chesapeake, barley and the castor-oil bean (*ricinus communis*) are cultivated; and, on some of the best lands above tide-water, hemp is raised to advantage. The trans-Alleghany country, being exceedingly mountainous and remote from market, is chiefly devoted to the raising of live stock. Very little more grain is raised than is necessary to supply the country itself, and the travellers and stock-drovers who pass through it. The climate and soil being favorable, the pastures are excellent. The greensward (*poa viridis*) and white clover (*trifolium repens*) spring up spontaneously wherever the timber is removed or deadened, and, on rich ground, are very luxuriant. Of the profits of agriculture in Virginia, it is difficult to speak with precision. In very many instances, it yields a bare subsistence to the cultivator; in others, a net income of two or three per cent. But, where the land is in good heart, the convertible husbandry practised, and wheat and tobacco are the chief products, there is no doubt that, with slave labor, a profit of from six to eight per cent. may be annually derived from the capital invested. For this result, however, great activity and attention are necessary on the part of the owner. Lands in the Valley, where there are comparatively few slaves, sell higher than on the eastern side of the Blue ridge; and the general appearance of the country is more prosperous, although the soil is, for the most part, inferior; the climate decidedly so; running streams less frequent; and communication with markets more difficult and expensive. In 1831, according to official returns, 44,529 hogsheads of tobacco were delivered from the several warehouses in the state for export and manufacture; and, during the year which ended in June, 1832, upwards of 544,000 barrels of flour passed the various inspections. The quantity of flour inspected is, however, a very uncertain index to the total product. Some of the Virginia flour, and especially the Richmond brand, has acquired great celebrity in South America and elsewhere. Most of the vegetable productions found in the Middle and some of the Southern States are common also to Virginia. West of the Alleghany, the sugar maple grows in abundance. There are some excellent native grapes, the culture of which will claim greater attention, since the winters have been found too severe for the foreign vine.—Few countries possess greater facilities for manufacturing; the raw material of almost every kind, labor sufficiently cheap and abundant, inexhaustible supplies of fuel, and water power without limit. Yet, with all these advantages, planting and farming will long be the favorite pursuits. In the northern and north-western parts of the state, and in some of the principal towns, valuable manufactories are established of cotton and woollen cloths, glass, iron, &c. The Kenawha salt-works produce annually about 1,000,000 bushels, and those of the Holston about 100,000.

Climate. In a country of such great extent, and of so uneven a surface, there is, of course, great diversity of climate. It is believed that few meteorological observations have been made, either at public seminaries or by private citizens. The diary of an intelligent gentleman at Richmond exhibits the following table of mean temperature for the years stated. His later observations are incomplete.

Average Temperature in	Morning.	Noon.	Night.
1824,	49⅚	65	55
1825,	48⅜	64⅜	54⅜
1826,	48½	65	54
1827,	50⅙	65	55

This table exhibits a striking approximation in the results of each year. The monthly calculations upon which it is founded, if compared with five years' observations made by Mr. Jefferson at Williamsburg, from 1772 to 1777, will authorize the conclusion that the climate of lower Virginia has undergone a considerable change in the last half century. According to Mr. Jefferson, the average daily range of the thermometer, in the five years mentioned, did not exceed from 5° to 7°; whereas, from 1824 to 1827 inclusive, the average variation was 16°. Richmond and Williamsburg are sixty miles distant, and except that the latter is nearer the ocean, and within the influence of its breeze, the difference in temperature must be inconsiderable. That the climate is much more fluctuating than formerly accords with the experience of most persons advanced in years. The changes are more sudden and violent: the heats of summer, especially in latter years, are more intense, and the winter cold more severe for short periods. The spring is exceedingly inconstant; but the latter part of autumn, particularly in the upper country, is a fine and delightful season. The *Indian summer*, which seldom fails to occur late in the fall, or in early winter, is distinguished by a golden haze, and most agreeable temperature.

Population.

By the census of 1830, the free white population amounted to		694,300
" " free colored " "		47,348
" " slaves " "		469,757
Total, ...		1,211,405
In 1800, the free white males numbered	514,280	
" free colored "	20,124	
" slaves "	345,796 —	880,200
Increase in thirty years, ...		331,205

or thirty-seven and a half per cent.

In the same period, the free whites increased 180,020, or 35 per cent.; the free colored persons 27,224, or 135 per cent.; and the slaves, 123,961, or 36 per cent. For the ten years preceding the census of 1830, the rate of increase of the whole population diminished considerably, and the relative increase of the several classes varied from the foregoing results. On the whole population, the rate was reduced from 37½ to 13½ per cent.; on the free white, from 35 to 15 per cent.; on the free colored, from 135 to 28½ per cent.; and on the slaves from 36 to 10½ per cent. It is to be observed, however, that, while the black population of the whole state has been diminishing, when compared with the white, the reverse is true in respect to Eastern Virginia, which is peculiarly the slave region; for, while, in 1790, there was in that district a majority of 25,000 whites, the slave and free colored population outnumbered them at every successive census, until, in 1830, the excess was upwards of 81,000. The facts thus exhibited show that Western Virginia, which contains comparatively few slaves, has rapidly increased its white population in the last ten years, the rate of increase amounting to 25 per cent.; while, on the eastern side of the mountains, the increase of the whites, in the same period, did not exceed 7½ per cent. The greater multiplication of blacks in Eastern Virginia, notwithstanding constant deportation to the Southern and South-western States, may be partly ascribed to the mild treatment which they generally receive from their owners. On the other hand, the evil effects of slavery, and the policy of adopting some scheme for gradual abolition, are topics which have been freely and earnestly discussed, and have already arrayed the Virginians into two powerful parties. The slow progress of the white population, compared with some of the other states, when so many propitious causes exist for its advancement, has been urged as a prominent objection to slavery. Indeed, the march of its aggregate population has fallen far short of the predictions of former times. Mr. Jefferson, in his Notes, which were written in 1782, estimated that the then existing stock, unaided by foreign emigration, would be multiplied to 2,270,000 by the year 1835, exceeding, by upwards of a million, the result of the last census. That the increase of numbers has been restrained by powerful checks seems reasonable; but to point out their true character and operation, belongs rather to the department of moral and political philosophy.

Education. The general assembly, in 1810, established the literary fund, by dedicating the proceeds of all escheats, fines and forfeitures to the encouragement of learning. In 1816, the fund was increased by the liberal grant of the debt due from the general government on account of advances made by the state to carry on the war with England. In 1831, the fund, from these various sources, amounted to $1,581,870. Its annual revenue is about $75,000. Out of the U. States' debt, the legislature made a donation of $230,000 in aid of the university of Virginia, established at Charlottesville, and, moreover, set apart an annuity of $15,000 out of the revenue of the fund towards the same object. The sum of $45,000 has also been annually appropriated to the several counties in the ratio of their white population, for the sole benefit and instruction of poor children in the elements of learning. The primary school system has been modified and improved from time to time, and is now placed under the management of the second auditor, who renders an annual report to the legislature, founded upon the returns of the county commissioners. In 1830, 14,169 poor children were sent to school, for each of whom the average expense of tuition within the year was $2:82, and the average daily sum less than four cents. Although the public bounty is confined to the offspring of indigent parents, a plan is in operation by which contributions may be received from individuals in aid of the establishment of schools open to all classes of pupils; and strong hope is entertained that the experiment will prove successful. Notwithstanding the difficulties which oppose any uniform and perfect scheme of elementary instruction—difficulties which arise from the mixed population of one portion of the state, and the thinly-settled and rugged surface of the other—experience has already demonstrated the great utility of the existing system; and thousands, who might have grown to manhood in utter ignorance, have at least been grounded in the rudiments of useful knowledge. The university of Virginia, situated near the seat of Mr. Jefferson, and the favorite object of his care while living, has a noble building, or rather collection of buildings, suited to the accommodation of nine professors, and upwards of 200 students. The latter, however, though gradually increasing, have at no time exceeded 140. The institution is furnished with a valuable library, philosophical apparatus, &c. William and Mary college, the most ancient seminary in the state, and the *alma mater* of many distinguished Virginians, is still prosperous. It has five professors, a library of 3 or 4000 volumes, a philosophical and chemical apparatus, and funds amounting to upwards of $130,000. Hampden Sydney college, in Prince Edward county, and Washington college, in Rockbridge county, are both flourishing institutions; and, besides these, a college has been lately founded at Boydtown, in Mecklenburg, under favorable auspices. Under this head, it may be mentioned that the state has a valuable public library at the seat of government, containing 6500 volumes in the various departments of science and literature.

Religion. Although the bill of rights, in 1776, declared that all men were equally entitled to the free exercise of religion, according to the dictates of conscience, yet the first constitution contained no express provision on the subject. The legislature, in 1785, passed an act for establishing religious freedom, and subsequently repealed all laws which recognised the Protestant Episcopal church as the legal establishment. The glebe lands, and other church property, were vested in the overseers of the poor for charitable uses, reserving only to the living incumbents an estate for life, and exempting the church buildings from confiscation. The new constitution of 1830 fully recognises absolute religious freedom as a part of the fundamental law. The Episcopal church, which, after the loss of its revenues, suffered almost total extinction in Virginia, has revived, in the last twenty years, by the voluntary support of its friends, and is now distinguished by numerous and wealthy members, and by a pious and intelligent clergy. In 1831, the number of ministers in the state, including two bishops, was 59, churches, 58, and 2840 communicants. In the same year, the Presbyterians numbered 94 ministers, of whom 14 were licentiates; 105 churches, and 7950 communicants: the Methodists, 131 ministers, and 39,058 communicants, of whom 4731 were colored people: the Baptists, 236 ministers, including 20 licentiates, 370 churches, or congregations, and 45,703 communicants, of whom it is conjectured that one half are blacks: the Catholics, 5 ministers, and 10 congregations; but the number of lay members is not ascertained. It will be perceived that the Baptists and Methodists are the most numerous sects in the state; and the estimate does not include a considerable number of separatists from both communions. Besides these, there are Friends, Lutherans, Dunkers, Unitarians, Jews, &c., &c., scattered through the state, whose numbers are not accurately known. The Presbyterians have a theological seminary in Prince Edward, and the Episcopalians one near Alexandria, both of which institutions have flourished by private liberality. The state, in its political capacity, has always manifested a strong jealousy of all ecclesiastical establishments; yet the Virginians are generous in private contributions towards objects of religion and benevolence. Sunday schools, and societies for promoting temperance, African colonization, &c., have been extensively patronised in latter years, and the vice of open infidelity is now much less prevalent than formerly.

Finances. The revenue of the state is principally derived from taxes on land, slaves, horses, carriages, merchants' and other licenses, and judicial proceedings. In 1817, the land, with its improvements, was revalued at upwards of $206,000,000, and the average price per acre, including town property, was a fraction more than $6. In 1831, the public income, besides the profits derived from specific funds devoted to education and internal improvement, amounted to $452,000, and the government expenditure to $434,000: the number of taxable slaves, 245,750; horses, 282,864, and pleasure coaches, 2982. The state taxes, compared with the public resources, are very moderate. The county levies for supporting the poor, erecting jails, and defraying other local expenses, are more burdensome. Permanent capital of the literary fund, $1,531,870; revenue of 1831, $73,103: capital of the fund for internal improvement, $1,428,961; revenue of 1831, $91,562.

Provision for Crimes, Pauperism, &c. There is but one penitentiary in the state, and that at the seat of government. The building is spacious, containing various workshops, manufactories, &c. The institution is well managed, and the labor of the convicts productive. There were 1690 convicts received from 1800 to 1831, of whom 84 were sentenced for second and third offences. In 1831, the number of convicts was 167, of whom 122 were white males, 1 white female, 39 black males, and 5 black females: 44 were natives of other states and countries besides Virginia. Jails are erected in every county in the state, each having separate apartments for debtors and criminals. They are under the inspection and supervision of the superior courts. The poor are supported by compulsory assessments in each county. In a majority of the counties, poor-houses have been erected: in the residue, the paupers are maintained at private dwellings. According to the official returns for 1829, the whole number of paupers was 4283, of whom 176 were persons of color. Amount of poor rates assessed, $124,214, or an average of $29 for each pauper. There are two lunatic asylums, one at Williamsburg, and the other at Staunton, both erected and maintained at the public expense: in 1831, total number of patients 83, besides many in the county jails, and in private dwellings, the hospitals being full. The legislature has made no provision for the support and education of deaf mutes, although, in 1825, the chief magistrate invited public attention to the subject. By the census of 1830, it appears that there were 654 of that unfortunate class of beings in the state, of whom 522 were whites, and only 132 blacks, being in the proportion of one out of every 1330 whites, and one out of every 3917 slaves and free colored persons. Out of 819 blind persons in the state, the largest proportion, or 445, belong to the colored class.

Militia. According to the official returns for 1831, the effective military force of the state was as follows:—

General staff, ...	102
Cavalry, ...	7,075
Artillery, ...	5,733
Grenadiers, infantry of the line &c., ...	88,578
Making, in the aggregate, . . .	101,488

being about one out of every seven of the white population.

Miscellaneous. Four principal banks and seventeen branches are located in various parts of the state. In 1831, the aggregate capital stock amounted to $5,607,100; notes in circulation, $4,114,715; specie, $832,462:49; bills discounted, $8,985,303: post-offices in the state, 743; foreigners not naturalized, 756; whole number of newspapers, 51, of which 26 are published east, and 25 west, of the Blue ridge; three are theological, and 48 commercial and political. Periodicals exclusively literary have been very little patronised.

Government and Laws. The new constitution of 1830 was adopted, after a sharp conflict upon various points. In the convention, a kind of compromise was effected between contending parties, by which, whatever may be considered as the extent of concession on either side, it is certain that a more just and equal representation was established in the legislature. This body is composed of two branches, the senate and house of delegates, the former consisting of 32, and the latter of 134, members. Thirteen senators and 51 delegates are apportioned to Western, and 19 senators and 83 delegates to Eastern, Virginia; and, after the year 1841, the legislature (two thirds of each house concurring) may re-apportion the senators and delegates throughout the commonwealth, so that the former shall not at any time exceed 36, nor the latter 150. The representation in congress is to be arranged upon the federal principle of numbers, adding three fifths of the slaves to the whole number of free persons. Senators must have attained the age of thirty, and delegates twenty-five; and both must be residents and freeholders in their respective election districts. All persons holding lucrative offices, and ministers of the gospel, are ineligible to either house. The general assembly shall meet once a year, or oftener, if necessary. All laws originate in the house of delegates. Various restrictions are imposed upon the legislature, intended to secure the freedom of religion, of speech, and of the press, the privilege of the writ of *habeas corpus*, &c.; but express power is conferred to disfranchise persons guilty of duelling. The right of suffrage, under the new constitution, is extended to lessees, house-keepers, &c., and may be exercised by almost every citizen. All elections are conducted *viva voce*. The chief executive power is vested in a governor, chosen by the general assembly for three years, and rendered ineligible for three years after the expiration of his term. He is assisted by a council of three, with whom he must advise, but may disregard their advice. The senior counsellor is lieutenant-governor. The judicial power is vested in a supreme court of appeals, in the county justices, and in such superior courts as the legislature may from time to time establish. The judges of the court of appeals and superior courts are elected by the general assembly, and hold their offices during good behavior, but may be removed by joint vote of the legislature, two thirds of the members present in each house concurring. The supreme court of appeals, consisting of five judges, holds its sessions alternately at the seat of government and at Lewisburg, in Western Virginia, and is the court of dernier resort in all civil causes at common law, and in chancery removed from inferior tribunals. The circuit superior courts are held twice a year in each county of the commonwealth; and the state is divided into ten districts and twenty circuits, to each of which circuits one judge is assigned. They have cognizance of all causes at common law and in chancery, and of all crimes and misdemeanors. One half of the judges assemble alternately at the seat of government in the months of July and December, and constitute the general court, which has cognizance of all criminal causes brought before it by writ of error, and entertains all motions against public debtors and defaulters. The county courts possess not only very extensive jurisdiction as tribunals of justice, but exercise considerable authority in matters of police, and other local concerns. Their services are altogether gratuitous, and their powers are dispensed with a kind of patriarchal simplicity, which renders them a popular branch of the judicial system. The common law of England, modified by successive statutes, is the basis of the Virginia code. Conforming to the spirit of free institutions, the abolition of entails, and of the law of primogeniture, were among the earliest alterations in the English system. The criminal code has been likewise ameliorated from time to time, until now there are but few offences for which capital punishment is inflicted.

History. A brief sketch of the colonial history of Virginia is all that our limits will permit. The final departure of captain Smith from the colony, in 1609 (see *Smith, John*), was followed by the disasters which always attended even the temporary absence of that extraordinary man. Riot and insubordination terminated in famine and extreme suffering, insomuch that, on the arrival of Gates, Somers and Newport, who were despatched from England about six months after Smith's return to that country, only sixty survivors remained out of a flourishing colony of 500 souls. Discouraged by misfortune, this miserable remnant determined to abandon the scene of their calamities, and had actually embarked for England, when they were met by lord Delawar, who prevailed on them to return, and recommence their career at Jamestown. For ten years after this event, the colony continued to advance in prosperity, and considerably extended its limits. Its stability and domestic happiness were greatly increased by the introduction, in 1620 and the following year, of 160 females, of humble fortune and spotless character, who became wives to the planters, at the moderate price, fixed by the London company, of 150 pounds of tobacco. About the same time, another event occurred, the ultimate consequences of which it is difficult to foretell: a Dutch vessel entered James river, and sold to the colonists twenty African slaves, thereby giving rise to that peculiar condition of society which distinguishes the Southern States. As the colony continued to grow in extent and population, inferior courts were established for the cheap and convenient administration of justice. Hence sprung the ancient county court system which now exists. The colony did not long enjoy unmixed prosperity. Various causes had conspired to lull all suspicion of Indian treachery and vengeance; but, in 1622, the savages made a sudden and secret irruption, in which 347 whites, including women and children, were horribly massacred. The gratitude of a domesticated Indian alone saved the whole from extermination. A vindictive war followed this act of aggression; public improvements were abandoned; the settlements were reduced in number, and scarcity once more prevailed to an alarming degree. Relief was generously despatched from England; but, the king's jealousy being about that time awakened by the freedom of discussion which prevailed in corporate bodies, and availing himself further of the frequent reverses of the colony, he dissolved the Virginia company, and revested its privileges in the crown. The entire direction of the colony was confided to a governor and twelve counsellors, appointed by special commission. Charles I adopted his father's policy, with such hateful additions, that, in a fit of popular rage, the colonists seized their governor, sir John Harvey, and sent him a prisoner to England, attended by deputies to represent their wrongs. The critical condition of the monarch, rather than his sense of justice, procured a redress of grievances. Harvey was displaced, and sir William Berkeley sent as his successor. This act of the crown, together with the call of an assembly, converted the Virginians into loyal subjects. Force only compelled them to yield to Cromwell's government; and, after the death of Matthews, the usurper's vicegerent, they proclaimed Charles II as king, before intelligence of his restoration had been received from England. Sir William Berkeley was reinstated as governor; but, during the despotic reign of Charles, so many causes of discontent accumulated, that they finally ripened into an actual rebellion, headed by Nathaniel

Bacon, a member of the governor's council, and a young gentleman of fine education and talents. After various outrages and calamities incident to civil war, including the destruction of Jamestown by the insurgents, the death of Bacon delivered the colony from the evils which threatened its existence. Berkeley resumed the government, but shortly afterwards returned to England, leaving Herbert Jeffries his successor. A long period of prosperous tranquillity succeeded. The settlement of the country extended beyond the mountains, and it was not until 1753, that the hostile encroachments of the French kindled a war, and involved the colony again in its calamities. The events of that period, during which the courage and conduct of the youthful Washington afforded a presage of his future renown,—as well as the causes which led to the overthrow of the British power,—belong rather to the general department of American history. Virginia gave birth to many illustrious men, who took a decided part against the mother country, and shared in the common sacrifices, toils and triumphs of the revolutionary struggle.

Virginia University, at Charlottesville, had, in 1831, nine instructers, 130 students, and a library of 8000 volumes. This institution has ample funds, and is very well furnished with philosophical apparatus. (See *Charlottesville*.)

Virgins, Eleven Thousand. (See *Ursula, St.*)

Viriathus, or **Viriathes**; a brave Lusitanian, who maintained a long struggle against the Romans in defence of his country. The Roman pretor, Servius Galba, had driven the Lusitanians, by his cruelties, to a revolt, when Viriathus, who had originally been a huntsman, and afterwards a robber, placed himself at the head of his countrymen, and defeated the Romans with such decisive success, that but few of those who were engaged in the battle escaped. New forces were repeatedly sent against him; but the Romans experienced several additional defeats, and Metellus alone was more fortunate. It was finally thought expedient, therefore, to acknowledge Viriathus as the independent sovereign of Lusitania (Portugal), and to conclude an alliance with him. But the Romans soon perfidiously broke the treaty, and Servilius Cæpio, the Roman commander, had this formidable enemy put out of his way by an act of treachery. Thus fell Viriathus, by the hands of assassins, after a fourteen years' victorious contest, in the year of Rome 612.

Visconti; an old Milanese family, celebrated, during the middle ages and in modern times, by its political consequence and by its patronage of science. Of the origin of the family and the name, we have no certain accounts; but some derive the former from the old Lombard kings, and the latter from the pretended right of its members to put the crown upon the head of the kings of Italy. History makes mention of the Visconti in the eleventh century; but they disappear from the time of the destruction of Milan by Frederic Barbarossa, when, with some other noble families, they were obliged to yield to the superior power of the opposite party, the Torriani, or family Della Torre. The first of the Visconti, who laid the foundation of their greatness, was *Otho*, archbishop of Milan (died 1258), who gained the ascendency over his enemies, and bequeathed his power to his nephew, *Matteo* (died 1322). The latter was, however, driven into banishment by the Torriani, but, after living in exile seven years, had the address to obtain the title of imperial governor, which he soon exchanged for that of prince of Milan. Matteo transmitted the supreme power to his eldest son, *Galeazzo*, who was overpowered by his enemies, among whom were his own brothers, and thrown into prison by Louis of Bavaria, in 1327. He died, soon after his release from confinement, at Brescia. His son *Azzo*, who succeeded him, and increased the extent of his dominions, was not less distinguished for his pacific virtues than for his military talents, and died in 1329, in the thirty-seventh year of his age, regretted by his subjects. As he left no son, his uncle *Lucchino* succeeded him. The latter extended still farther the dominions of the family, and was the first of the name who was distinguished as a patron of science and art. He maintained a correspondence with Petrarch, whom he knew how to appreciate, and was not ashamed to sacrifice to the muses himself, as is proved by a sonnet of his composition, which has been preserved by Crescimbeni. After his death, in 1349, his brother *Giovanni* (died 1354), archbishop of Milan, assumed the reins of government. He reduced Genoa, and was a zealous patron of letters. He appointed a commission of six learned men to compose a commentary on Dante, fostered the university of Bologna, and received Petrarch, on his arrival at Milan, with the highest marks of distinction. Giovanni was succeeded by his nephews, *Matteo II*, *Bernabò*, and *Galeazzo II*. Matteo died within a year; and his two brothers, though eminent for their warlike talents, rendered themselves obnoxious by their cruelty and other vices. Galeazzo, however, deserves praise for his encouragement of letters. He continued to treat Petrarch with the same respect that his predecessors had shown him, and employed him in several negotiations. The poet always mentioned him with esteem and gratitude, and is said to have induced him to found the university of Pavia. He was succeeded, in 1378, by his son *Gian Galeazzo*, who imprisoned his uncle Bernabò, in the castle of Trezzo, and took upon himself the sole government. In him the Visconti family reached the summit of its grandeur and splendor. In 1395, he received, from the emperor Wenceslaus, the ducal dignity; and his territories were more extensive than those of any of his predecessors. Pisa, Sienna, Perugia, Padua and Bologna were subject to his sceptre; and he had already shown a disposition to assume the title of king of Italy, when his ambitious projects were cut short by his death, of the plague (in 1402). With elevated views, he fostered science and art, collected the most distinguished scholars at his court, restored the university of Piacenza, connected that of Pavia with it, and founded a large library. During his reign, also, some great architectural works were executed; among them, the celebrated bridge over the Tessino, at Pavia, and the magnificent cathedral at Milan (1386—97). Gian Galeazzo left three sons, *Giammaria*, *Filippo Maria*, and an illegitimate child, *Gabriel*, among whom his dominions were divided. Their mutual dissensions and youthful indiscretions soon undermined their power. In most of the Lombard cities, single powerful citizens raised themselves to the head of their respective towns, and the neighboring states took advantage of the favorable opportunity to extend their limits at the expense of the Visconti. The Florentines took Pisa, and the Venetians gradually obtained possession of Padua, Vicenza, Verona, Brescia, and other towns. Giammaria was hated for his cruelty, and, in 1412, fell a victim to a conspiracy. Filippo Maria now reigned alone, and, during the remaining thirty-five years of his life, was alternately at the summit of happiness and in the depths of misery. As often as he had the fortune to recover any of the lost cities, so often had he the grief to witness their renewed loss; and his last years were embittered by the hostilities of the Venetians, who repeatedly advanced to the walls of Milan, and devastated the surrounding territory. He died in 1447, leaving no male heirs. His natural daughter, *Bianca*, had been married to Francesco Sforza, one of the most distinguished generals of the time. The Milanese were desirous to regain their ancient freedom; but they were unable to defend themselves against the attacks of the rival princes, who were eager to gain possession of so rich and beautiful a country; and they found themselves obliged to put themselves under the government of Sforza, who was named duke of Milan in 1450. (See *Sforza*, and *Milan*.)

Visconti, John Baptist Anthony; an Italian antiquary, born at Vernazza in Genoa, in 1722, and educated at Rome by an uncle, who was a painter, and who designed his nephew for the same profession. But the latter preferred the study of antiquities, and, that he might be at liberty to follow his inclination, purchased the office of apostolic notary. He became connected with the celebrated Winckelmann, whom he succeeded, in 1768, in the station of prefect or commissary of antiquities at Rome; and Clement XIV, on his elevation to the pontifical throne, the following year, having formed the design of founding a new museum in the Vatican, the execution of the plan was intrusted to Visconti, who superintended the researches for ancient monuments carried on at Rome under popes Clement XIV and Pius VI. Among the relics of former ages brought to light, was the tomb of the Scipios, relative to which Visconti published Letters and Notices in the Roman Anthology; and he was the author of some other archæological memoirs. His death took place Sept. 2, 1784. He was appointed editor of the *Museum Pio-Clementinum*; but the text accompanying the engravings of that work was written by his son.

Visconti, Ennius Quirinus, son of the preceding, and one of the most celebrated archæologists and antiquaries, was born at Rome, in 1751. While a child, he knew how to distinguish the heads of the emperors upon medals, at an age when he could hardly pronounce their names. In the tenth year of his age, he underwent a public examination in Roman and biblical history, numismatics, chronology, geography, geometry; and, in his twelfth year, he was able to solve the most difficult problems of trigonometry and analytical geometry. The next year, he published a metrical version of the *Hecuba* of Euripides, with an account of his method of studying languages, and soon after undertook a metrical translation of Pindar. His father had formed the plan for a description of the Pio-Clementinum museum, and executed some articles of it; and the first volume, which appeared in 1782, bears his name; but the son had written the chief part of it, and he continued this great work, which appeared under the title *Il Museo Pio-Clementino descritto*, in the following order: two volumes, 1784; third, 1788; fourth, 1790; fifth, 1792; sixth, 1796; and seventh, 1807. An eighth volume, entitled *Il Museo Chiaramonti*, is by Philip Aurelius Visconti and Guattani. This labor alone would be sufficient to immortalize him; and he likewise published numerous archæological treatises in different Italian journals. When the treasures of ancient art were removed from the cities of Italy to Paris, Visconti followed them to that place, and arranged and wrote a descriptive catalogue of the antiques in the museum. The last edition of this catalogue, which abounds in ingenious and learned remarks, appeared in 1815, under the title *Notices des Statues, Bustes et Bas-reliefs de la Galerie des Antiques du Musée Napoléon*. In 1817, he published *Description des Antiques du Musée royal*; and his description of the rich collection known by the name of the *Musée Français* is still more complete. Visconti had been chosen a member of the institute in 1800; and he continued, after his arrival in France, to contribute learned and valuable papers to different journals and other literary publications. Nothing, at that time, was in a more confused state than iconography: there were innumerable portraits of the great men of antiquity in existence, but archæologists were at a loss in determining the respective individuals. Visconti undertook the task of forming a complete Grecian and Roman iconography. The former was published in three volumes, folio (*Iconographie Grecque*), Paris, 1811, and the two first parts of the latter, containing the celebrated Romans, in 1818, leaving only the iconography of the emperors, which was rendered an easier task by the number of medals, and has been executed by Mongez. Visconti's services were also sought in foreign countries. Lord Worsley engaged him to describe the collection of works of art which he had procured in Greece; and the description was published at London, under the title *Il Museo Worsleyano*. Parliament also sent for him, to consult on the purchase of the Elgin marbles; and he prepared an excellent catalogue of those celebrated antiques. (See *Elgin*.) Visconti died in 1818. Few inquirers into antiquity have possessed such various and extensive knowledge of all departments illustrative of its study. His complete works appeared at Milan, in 1824 seq., in Italian and French (*Opere tutte, divise in tre Classi*: 1st division, 8 vols.; 2d, 5 vols.; and 3d, 8 vols.), with numerous engravings.

Viscount, in England; a title of nobility, indicating a rank between an earl and a baron. (See *Earl*, and *Nobility*.) The first viscounts in England were created in the reign of Henry VI; and they have never been numerous.

Vishnu; the second person of the Hindoo *trimourti*, or trinity, consisting of Brama, the creator, Vishnu, the preserver, and Siva, the destroyer. (See *Avatar*, and *Indian Mythology*.)

APPENDIX.

Tarantula (*aranea tarentula*); a large species of spider, celebrated on account of the popular story that its bite can only be cured by dancing to music till the sufferer is exhausted. Much has been said and written on this subject; but there appears to be no sufficient evidence that the story has any foundation whatever in fact. It is, however, commonly believed in Italy and other countries on the Mediterranean inhabited by this insect. The name seems to have been derived from the city of Tarentum, in Italy. The habits of the animal are similar to those of many other spiders. It constructs a vertical hole in the ground, several inches in depth, and places itself at the entrance for the purpose of leaping upon such insects as may chance to approach. These it drags to the bottom of its habitation, and devours at its leisure. The color is brown, with an ash-colored margin; and the abdomen has a dorsal line of triangular, deeper spots.

Theology (from θεος, God, and λογος, word, science) signified, with the Greeks, the dogmas and mythuses relating to the gods and the origin of the world. It was divided into mythological theology (the whole of that which the poets relate of the origin of the world and the nature of the gods); political theology, or the doctrines on these points which the governments acknowledged; and physical theology, or the views of philosophers. Those who occupied themselves with inquiries on these subjects, were called *theologians*. (See Cicero, *De Natura Deorum*, iii, 21; Augustinus, *De Civitate Dei*, vi, 5; Clement of Alexandria, in the work entitled *Stromata*, book v.) The Christian meaning of *theology* must be distinguished from this. Among the early Christians, theology (i. e. Christian theology) signified the doctrine of the divine nature of Jesus Christ, or the whole doctrine of the Trinity. (See Athanasius's *Second Discourse against the Arians*, in his works, vol. i.; Eusebius's *Ecclesiastical History*, i. 1.) Since the eleventh century, *theology* has been used to denote the doctrine of God and his worship in general; also the whole sum of Christian doctrines. In this latter sense, Abelard (q. v.) wrote a system of theology in the twelfth century. In more modern times, however, Christian theology has been distinguished, still more accurately, from the Christian religion. By the former is meant the scientific knowledge of the history and doctrines of Christianity, necessary to the teacher of religion. It requires, therefore, an acquaintance with the ancient languages, to enable the interpreter of the Bible to decide for himself, by accurate comparison of the original, on the true sense of the Scriptures, and all other knowledge connected with a right understanding of the Bible; therefore a good acquaintance with the history of the Christian church (which affords the most intelligible and convincing proofs of the power, truth and divinity of Christianity, and sheds light upon the gradual formation of particular doctrines); also a philosophic spirit, and an acquaintance with natural theology, to enable the student to understand the relations of revealed religion to the conclusions of reason and experience on subjects of religious faith, and to keep in view the leading idea of Christianity in judging of the doctrines contained in the Holy Scriptures. Such a philological, historical and philosophical acquaintance with the doctrines of Christianity is essential to the religious teacher, that he may accommodate his instructions to the import of the Holy Scriptures, and may be able to defend his convictions against all attacks. As many men of cultivated minds early became converts to Christianity; as different opinions, on particular points, soon grew up in the different religious communities, and among the teachers of the church; and as Christianity met with many learned opponents, who were to be resisted by the weapons of learning and argument,—a Christian theology was necessarily formed at an early period. What the fathers of the church and the schoolmen of the middle ages had done for this science, was insufficient to satisfy inquirers, after new aids had been afforded to scientific study by the invention of printing, the revival of learning, and the new principles introduced by the reformation. The investigations of the reformers had begun to shed light upon the diversities of their creeds; but the symbolical books which were soon drawn up, checked the Protestant theologians in the application of their principles, and, with the exception of researches into ecclesiastical history, which were favored by the Calvinists in particular, left free play only to polemics. In the love of controversy, in an obstinate adherence to preconceived notions, and in the use of the dialectical method of the schoolmen, the Protestant theologians of the seventeenth century differed little from the Catholic. But about the end of that century, theology received a new character from the efforts of Spener to give practical efficacy to the principles of Christianity, and from the deism of the English philosophers. The tendency of the former was to pietism and the neglect of scientific cultivation; that of the latter to a chilling scepticism. Theology was threatened with danger by both, but this danger was averted by the labors of the German clergy. Resting upon the principle (which gradually became more and more acknowledged) of free inquiry, supported by a love of historical and philosophical truth, and directing their efforts to the points most connected with the improvement of men in wisdom and virtue, the German Protestants, since the middle of the eighteenth century, have done more to give a scientific character and practical utility to theology than had been done in any previous century of the Christian church. On account of the peculiar cultivation of theological science in Germany, we shall now give a view of the mode in which it is treated at present in that country, taken from a small pamphlet published by the theological faculty at Halle, for the use of students in theology—*Anweisung für angehende Theologen* (Halle, 1827). The whole range of theological science may be conveniently divided into four parts—exegetical, systematical, historical and practical theology.—*Exegetical Theology* embraces all those branches of knowledge that are requisite for the correct understanding of the writings of the Old and New Testament, which contain the records of the Christian religion. The following are its principal subdivisions:—1. The historico-critical introduction to the books of the Old and New Testament. This treats of the history and form of these books, of their age, origin and contents. 2. Biblical hermeneutics, or theory of interpretation. This applies the general principles of interpretation, which are common to all writings, to the biblical writings in particular, and derives also special rules from those circumstances which are peculiar to the biblical books. Closely connected with hermeneutics is biblical criticism, including verbal criticism, which occupies itself with the judgment and restoration of the sacred text; and the (so called) higher criticism, which consists in investigations relative to the authenticity of the several books of Scripture. 3. Biblical exegesis. This is the practical application of the principles of hermeneutics and criticism to the grammatico-historical interpretation of the original text of the Scriptures.

Systematical Theology consists in the methodical and orderly investigation and proof of religious truths and propositions, or those connected with religion; all of which, when collected from the Scriptures, and united into one whole, constitute the system of the Christian religion. All these truths and propositions have reference either to objects of knowledge and belief, or to that which is conformable to duty in our affections and actions. Hence the following distinctions:—1. Dogmatic theology, or system of Christian faith; that is, the systematic exhibition or discussion of that which is taught in the Christian Scriptures in regard to God, his attributes, operations and relations to us. A distinction is made between biblical theology, which derives the system of doctrines exclusively from the Bible, and ecclesiastical theology, or the systematical exhibition of the biblical doctrines according to the creed of the Evangelical church. Both these are usually treated together, and in connexion with critical investigations; but they are sometimes separately discussed. Lectures upon this science sometimes include the history of Christian doctrines, or attack erroneous views on the spot. This last is called *polemic*, or *elenchtic theology*. The history of doctrines, however, together with the general history of the Christian faith, and also polemics, are sometimes treated separately from dogmatic theology. So is apologetic theology, or the defence of Christianity, which, however, is more commonly united with the lectures on dogmatics. 2. Moral theology, or Christian ethics; that is, the systematic exhibition of what is taught in the Scriptures, especially in the New Testament, respecting the duties of mankind in regard to their affections and actions.

Historical Theology includes all those branches of knowledge which relate to the history of religion, in the widest sense of the term, and of all which stands in connexion with religion, or has originated from it. Historical theology includes, 1. The history of Christian doctrines. In this the student is led to see the gradual formation of the system of doctrines held by the church. An acquaintance with the history of the fathers (patristics) is also recommended. 2. Symbolical theology, or the historico-dogmatical explanation and illustration of creeds and confessions in the Evangelical church, and a comparative exhibition of the systems of other Christian denominations. 3. Archæology, or antiquities, for the illustration of the biblical writings, and the exhibition of the primitive constitution of the Christian church. 4. Theological literature, or bibliography.

Practical Theology occupies itself with the whole circle of studies directly preparatory to the exercise of the office of a Christian teacher. The general method of popular and practical religious instruction is usually taught in connexion with rules for a continued discourse, as in sermons (homiletics), and rules for catechetical instruction. 2. Pastoral theology invites attention to the duties of the pastor, and to that prudence which it becomes him to maintain in all the business of his office. It includes the subject of liturgies and his duties as director of the external worship. 3. Ecclesiastical law includes, generally, all the laws and privileges having reference to religion, and in regard to the sources of which all Christian denominations are agreed. Specially, it relates to particular ecclesiastical communities. Of the latter, the canon law and the German Protestant ecclesiastical law are the chief kinds. (See also the note to the article *Universities*, which gives the list of theological lectures at the university of Berlin.)

TORPEDO; a genus of fishes, belonging to the family of the rays, and formerly united with them under the *raja* of Linnæus. It is distinguished by the short and somewhat fleshy tail, and the nearly circular disk formed by the body. This is smooth, and the teeth are small and acute. The electrical apparatus, which has rendered the torpedo so celebrated, consists of small membranous tubes, disposed like honey-comb, and divided, by horizontal partitions, into small cells, which are filled with a mucous substance. These occupy the space between the head gills and pectoral fins, and are abundantly supplied with nerves from the eighth pair. This conformation is analogous, in many respects, to the galvanic pile, and, accordingly, the identity of the benumbing power of these animals with electricity may be considered established. A Leyden jar may be charged by one of these animals. This extraordinary structure, which may lead to the determination of important points in general physiology, serves a more humble purpose in the economy of the animal. By exercising this power, the torpedo is enabled to procure its prey, and to protect itself against enemies. Whoever attempts to lay hold of it receives a sudden, paralyzing shock in the arms; and small fishes, it is said, are completely stunned on approaching it. This faculty is by no means confined to the species of torpedo. The *gymnotus*, or electrical eel (see that article), of the fresh waters of South America, possesses it in a still more extraordinary degree; and it has lately been discovered in a *silurus*, or catfish, of the African rivers, as well as in several other fishes of different genera. The torpedo, however, is best known, as it has been an object of astonishment and terror with the common people in all ages. According to Cuvier, several species inhabit the European seas, which have been confounded under the *raja* torpedo of Linnæus. They frequent sandy coasts, and sometimes, it is said, even conceal themselves above low-water mark. According to Mitchill, we have one upon our own coasts, which is sometimes taken on St. George's Bank, in the ocean, near Block island, and to the southward. Few are taken in the course of the season, and these only by the hook and line, while fishing for cod. These instances are, however, well remembered by the fishermen, who call the animal *numb-fish*, or *cramp-fish*. It is said sometimes to attain the weight of a hundred pounds. The liver is cut out for the sake of the oil; but no use is made of the body.

Turnip (*brassica rapa*); a cruciferous plant, belonging to the same genus with the cabbage, extensively cultivated for the sake of its esculent root. This latter is turbinate, more or less depressed, but varies somewhat in color, size and form in the subvarieties produced by culture. It is of a fleshy consistence, and has a sweet, somewhat pungent, and agreeable taste. The radical leaves are oblong and lyrate; the upper ones entire: the flowers are usually yellow. The smaller varieties, in general, are most agreeable to the taste, and most esteemed; but the quality depends very much on the nature of the soil, which should be sandy and light. The ordinary season of sowing is from the end of June to the beginning of August; but if it is desired to procure them throughout the season, they may be sown from March till September. Turnips are a wholesome article of food, much in use. The large-rooted varieties have been employed in Europe for fodder, during the winter season, from time immemorial. They are given to cattle to fatten them, and also to sheep, hogs, &c. It has been ascertained that the most advantageous mode of field culture is by drills, which will produce crops of treble the weight of those grown in the broadcast manner.—The *ruta baga*, or Swedish turnip, is a variety of *B. campestris*, often cultivated. The root is large, of a yellowish color; but, in general, it is less esteemed than the common turnip.

Turnspit; an active, industrious variety of the dog, once considered an indispensable attendant on the spit, and still employed in some parts of Europe. It is distinguished by the length of the body, and shortness of the legs; the tail is curled on the back, and the usual color grayish, with black spots.

Turtle Dove (*columba turtur*). This bird is shy and retired, and builds only in deep woods. It makes the forest resound with its plaintive cooings. It is celebrated for its conjugal attachment, and is found in all the temperate parts of the eastern continent. We have, in all parts of the U. States, the Carolina dove, a species analogous in many respects.

Unitarian; a name used to designate a class of religionists, who hold to the personal unity of God, in opposition to the doctrine of the Christian Trinity. The Unitarian faith appears first to have been avowed (after the reformation) by Martin Cellarius, a native of Stuttgard, who was just finishing his studies at Wittenberg, where Luther was professor, when the latter began to set himself in opposition to the authority of the Roman Catholic church. Cellarius adopted Luther's views, and was at first distinguished by his friendship and that of Melanchthon. His subsequent avowal of Unitarian opinions subjected him to an imprisonment, whence being released, he retired, in 1536, to Basle, and died there in 1564. Among other theologians, who, about the same time, were led to a like result, were Lewis Hetzer, put to death by the magistrates of Constance, in 1529; John Denkius, rector of the school of Nuremberg, who was associated with Hetzer in translating the Prophets into German; John Campanus, of Wittenberg; Adam Pastor, a Westphalian; and Claudius, a Frenchman, who, about 1530, preached his doctrines in Switzerland and Alsace. A person of more note than any of these was Michael Servetus, born, in 1509, at Villanueva, in Arragon, whence he is sometimes called Michael Villanovanus. During his study of the common law, at Toulouse, the news of the spreading reformation engaged him in an examination of the sacred writings; and, in the sequel, he renounced the doctrine of the Trinity. Not venturing then to publish his belief in France, he removed, in 1530, to Basle. In the following year, he published, at Strasburg, his *De Trinitatis Erroribus, Libri septem*, and soon after, at Haguenau, his *Dialogorum de Trinitate, Libri duo*. From the storm which these works excited, he retired first to Basle, then to Lyons, and lastly to Paris, where, under his name of Villanovanus, he studied medicine, and became, for a short time, a public lecturer in that department of the university. His great work, *Christianismi Restitutio*, was published anonymously, in 1553, at Vienna. The same year, he was arrested, at Geneva, on his way into Italy, and condemned to be burned for heresy—a sentence which was carried into effect the following day.—In Italy, a similar movement of opinion had, meanwhile, been taking place. In 1546, the inquisition obtained knowledge of a society of persons of rank and learning at Vicenza, who were accustomed to meet for the consideration of religious questions, and, among other doctrines of the church, had discarded that of the

Trinity. Three of the number were apprehended, one of whom died in prison, and the other two were put to death at Venice. The rest, comprising several of the names afterwards the most distinguished in this cause, effected their escape. Among them appears to have been Lælius Sozzini, or the elder Socinus, a native of Sienna, in Tuscany. After the dispersion of his friends at Vicenza, he withdrew to Zurich, from which place he travelled through various countries of Europe, and, among others, at two different times, into Poland, where he is said to have converted to his opinions the confessor of the queen. He wrote largely upon the Trinity, as afterwards appeared from manuscripts left in the possession of his nephew, but published nothing, and died a natural death at Zurich, at the age of thirty-seven. The inconveniences which Unitarians had hitherto encountered in avowing their faith, naturally leading them to look for some common retreat, their attention was directed to Poland, in consequence of the free institutions of that kingdom, and the lax sentiments of toleration which were attributed to its reigning monarch, Sigismund II. A large portion of the reformed clergy of Poland ranked themselves in their number, as early as 1565, in which year they were separated from the communion of the Calvinists and Lutherans. The period of their prosperity now began. They were included within the *pacta conventa*, or grant of freedom of worship. Their discordant opinions on minor points became harmonized, partly under the influence of Faustus Socinus, nephew of Lælius, who established himself among them in 1579, and, though at first received coldly, soon acquired the ascendency due to an earnest and disinterested character and singular powers of mind. From their settlement at Racow, where they had a college, which, at one time, numbered more than a thousand students, and from other places, they sent out numerous learned publications, spreading their views of the Christian system far and wide. In every part of the kingdom they had churches; and among their adherents were numbers of the principal nobility. The most accessible monument which remains of the abilities and erudition of their writers is in the collection called *Bibliotheca Fratrum Polonorum*, made in 8 vols., folio, by Andrew Wissowatius and others, and containing works of the two Socini, Schlicting, Wolzogen, Crellius, Przipcovius and Wissowatius; to which, in some copies, is found added a volume of writings of Brenius. Measures which followed, of combined hostility against them on the part of Catholics and other Protestants, were favored by the unsettled state of Poland during the seventeenth century. The disorderly conduct of some students of the college at Racow, who had broken down a cross at one of the gates of the town, was seized on for the occasion of severe measures of coercion; and, though the offenders were punished, and every satisfaction for the outrage offered by their parents and the governors of the college, this did not prevent the passage of a decree, by the diet of Warsaw, for the church and college to be closed, the press to be stopped, and the professors sent into exile. This decree was followed, through the twenty succeeding years, by others, with provisions more severe, till, in 1658, the Unitarians were forbidden, under pain of death, publicly to solemnize their worship, or profess their sentiments, and required to attach themselves, within three years, to the Catholic, Lutheran, or Calvinistic communion, or quit the kingdom; and, in 1660, the time allowed in this alternative for disposing of their property, and making other arrangements for expatriation, was further abridged by a decree making immediate outlawry the penalty of delay. In the dispersion which followed, some went to England, some to different states of Germany, some to Holland (where the *Bibliotheca*, above mentioned, was published, and where, before long, they became merged in the body of Remonstrants), and some to Transylvania.—They continued to be known as a distinct community only in this latter country, where, under the auspices of George Blandrata, a Piedmontese physician, and a friend of Faustus Socinus, their doctrine had appeared not long after the period of its rise in Poland, and had been favored, in like manner, by a system of toleration, pursued by two successive monarchs. But, whether from other causes, or owing to the toleration being limited to a particular form of the Unitarian doctrine (involving the obligation of invoking Christ), the number of professors never became large. The Unitarian still remains one of the four communions recognised by the Austrian government of Transylvania. According to the *Conversations-Lexicon*, it consists of 50,000 persons, divided among 164 churches, governed by a superintendent and two consistories. At Clausenburg, their principal seat, and at Thoarda, they have schools. The most considerable publication which has proceeded from them, is the *Explicationes Locorum Vet. et Nov. Test. ex quibus Trinitatis Dogma stabiliri solet*, by George Enjedinus, their third superintendent. The most recent formal exposition of their views is believed to be found in the *Summa Universæ Theologiæ secundum Unitarios* (Clausenburg, 1784), attributed to professor Marcos.—In Holland, Erasmus John, rector of the college of Antwerp, published, in 1585, an anonymous work, favoring this system, entitled *Antithesis Doctrinæ Christi et Antichristi de Uno Vero Deo.* He was forthwith banished. Thirteen years after, Ostorode and Voidove, for similar publications, were ordered, by the states-general, to leave the United Provinces within ten days, and their writings to be burned. Brandt, as quoted by Mosheim, says that, when the multitude had assembled to witness the execution of the latter part of the sentence, the books were no where to be found. The magistrates were curious to examine them, and had divided them among themselves and their friends. In 1627, Adolphus Venator, minister of Almaer, was banished for composing a work which savored of Socinianism, *quod portenta Sarmatica saperet.* It being still found, however, that there were many Unitarians in Holland, *magnam in his terris Socinianorum messam esse* (L'Amy), the synods of the Seven Provinces sent a delegation to the states-general, urging the necessity of further measures; whereupon that body, after consulting the divines of Leyden, issued an edict, bearing date September 19, 1653, forbidding the profession of the Socinian heresy, and the holding of its assemblies, under pain of banishment for the first offence, and punishment at discretion for the second. But—whether it was owing to impressions made by the Apology of Schlicting, published in the next year, to the opposition of public sentiment, to the numbers of the Unitarians themselves, or to the apparent inconsistency of the edict with the principles of toleration already asserted by the states-general in several treaties, as well as in their articles of union—it does not appear to have been carried into rigid execution. To mention no other single names than those of Episcopius, Grotius, Le Clerc, and Wetstein, there has probably been always a large number of Unitarians among the Remonstrants of Holland. But the Remonstrants have not published their opinions freely, being, at all times, a depressed sect. Their ministers at one period were deprived, and at another banished; and, till the Dutch revolution in 1795, no Remonstrant could hold a public office, or be a professor in the universities, or a teacher in the public schools. A relaxation of attachment to hitherto current opinions may be inferred from the fact, that, in 1817, on the recovery of Dutch independence, an assembly of professors and divines was convened, which permitted candidates for the ministry to profess and teach the articles of the synod of Dort, *as far as they are in accordance with the Bible.* More recent publications of that country show that Unitarian opinions have there disseminated themselves to no inconsiderable extent.—Unitarianism in England dates almost as far back as the earliest translation of the Bible. Strype, in his Memoirs of Archbishop Cranmer, says, "There were other heresies now (1548) vented abroad, as the denial of the Trinity and the Deity of the Holy Ghost;" and, two years after, the same writer reports, "Arianism now showed itself so openly, and was in such danger of spreading further, that it was thought necessary to suppress it by using more rugged methods than seemed agreeable to the merciful principles of the profession of the gospel." In 1551, a German, named George van Paris, was burned at London, for this heresy, and, four years after, another person, at Uxbridge. Joan Bocher, sometimes called the *maid of Kent*, was a more distinguished victim. She was a lady of family and education, and of heroic courage. Alluding to an opinion entertained by her concerning the corporeal substance of the Savior, "It is a goodly matter," said she to her judges, "to consider your ignorance. Not long ago, you burned Ann Askew for a piece of bread, and yet came yourselves to believe and profess the same doctrine for which you burned her. And now, forsooth, you will needs burn me for a piece of flesh; and, in the end, you will come to believe this also, when ye have read the Scriptures, and understand them." (Southey's *Book of the Church.*) Edward VI could hardly be prevailed upon to consent to her execution, and signed the warrant, saying to Cranmer that he must be responsible for the sin. Under James I, a large number of persons, some of them of rank and consideration, were executed for the same offence. In Cromwell's time, they seem generally to have had milder treatment. Biddle, their leader, was at last, however, thrown by the dictator into prison, where he died in 1662. The posthumous work of Milton, first published in 1825, shows him to have adopted their sentiments. An act of the long parliament, in 1648, making the profession of Unitarianism a felony, was so far mitigated, after the revolution, by statutes of the eighth and ninth of William III, as to make the offence punishable, in the first instance, by certain civil disabilities, and, in the second, by three years' imprisonment, and virtual outlawry. These statutes were not repealed till 1813. In the latter part of the seventeenth, and the beginning of the eighteenth century, however, besides other names of the first distinction, their claim to which is disputed, we find, among avowed English Unitarians, those of Firmin, Emlyn, Whiston, Samuel Clarke, and Lardner; and, to go higher, of Locke and Newton. Towards the close of the last century, several clergymen of the established church (Lindsey, Jebb, Wakefield, Disney, and others) resigned their benefices, in consequence of having adopted Unitarian views, while, at the same time, among numerous converts from the dissenting sects, appeared the names of doctors Priestley, Price, Aikin, Rees, and others of scientific and literary note. The English body of the *three denominations*, as it is called, is composed of the Presbyterians, Independents and Baptists. Of that portion of the latter class called General Baptists, a majority are acknowledged Unitarians. Such was, towards the close of his life, Robert Robinson, the author of the Village Sermons, and doctor Toulmin, the learned editor of Neal's History of the Puritans; and the Presbyterian churches, throughout England, are understood to be, with scarcely an exception, occupied by congregations of this sort. Their number was reckoned, ten years ago, at more than two hundred. (*Unit. in Ang. Fid. Hist. Stat. Præsent. Brev. Expos.*) In the Presbyterian churches in the north of Ireland, a vehement controversy has been carried on within the two or three last years, the event of which is understood to have been to detach about forty churches from the body of that communion, and unite them, as professed Unitarians, into a society of their own, consisting of several presbyteries. There are also congregations of this character in Dublin, and in other southern cities of the kingdom. In Scotland, there are Unitarian chapels in Edinburgh, Glasgow, and other principal places. Among the leading periodical publications devoted to this cause in Great Britain, are the Monthly Repository, printed in London; the Christian Reformer and Reflector, at Liverpool; and the Christian Pioneer, in Glasgow. There is a Scottish Unitarian Association lately formed; and the British and Foreign Unitarian Association, meeting annually at London, serves for a bond of union for professors of the belief throughout the three kingdoms. The principal supply of ministers is from Manchester college, at York; others come from the Scotch universities, and from that of Dublin.—As early as 1690, some English ministers complained to a synod, convened at Amsterdam, of the growing heterodoxy of the Genevan church. The first public measure of importance in the connexion, was a decree of the Company of Pastors, in 1725, dispensing candidates for ordination from subscription to the Helvetic confession, and substituting for this a profession of holding "the true doctrine of the holy prophets and apostles, as comprised in the books of the Old and New Testaments, and summarily set forth in the catechism." Vernet, theological professor in the academy, published, not long after, his disbelief in the consubstantiality of the Son. In 1757, the article *Geneva*, in the French Encyclopædia, announced, that "many of the ministers disbelieved the divinity of Jesus Christ, of which Calvin, their leader, was the zealous defender." In 1788, the catechism of Calvin was superseded by another, of a character to indicate the justness of this statement. In 1807, a liturgy, expurgated upon Unitarian principles, was substituted for that anciently in use; and, two years earlier, a professedly amended version of the Scriptures, which had been in preparation upwards of a century, was published under the authority of the Venerable Company of Pastors. At the present time, the twenty-seven pastors of the established church of the canton are understood, with two or three exceptions, to hold to Unitarian opinions. A controversy on the subject broke out in 1816, which, though much discouraged by the magistrates, continues to the present time. M. Chenevière, rector of the academy, the most distinguished writer of the dominant party, published, in 1831, an *Essai du Système Théologique de la Trinité*, and an *Essai du Péché original*, in which are argued, at length, Unitarian views upon these points.—In America, Unitarian opinions appear (president Adams's letter to doctor Morse) to have been extensively adopted in Massachusetts as early as the middle of the last century. In 1756, Emlyn's Humble Inquiry into the Scripture Account of Jesus Christ, was published in Boston, chiefly, it is said, by the agency of doctor Mayhew, of the West church, and came into wide circulation. One of the three Episcopal churches of that city adopted, in 1785, a liturgy excluding the recognition of the Trinitarian doctrine. In 1805, attention was extensively drawn to the subject by several publications, occasioned by the appointment of a distinguished Unitarian to the divinity chair of the university of Cambridge. In 1816, the controversy was revived by a republication, in this country, of a chapter from Mr. Belsham's Life of Lindsey, with the title American Unitarianism. Up to this time, the doctrine had been hardly discussed out of New England, though a small society, dating from the visit of doctor Priestley, in 1794, existed in Philadelphia. In 1819, a congregation was gathered in Baltimore; and others now exist in New York, Philadelphia, Washington, Charleston, Pittsburg, Cincinnati, and other principal cities of the Union. The number of churches organized according to the Congregational form is reckoned at from 170 to 200. Their ministers are chiefly furnished from the divinity college of the university of Cambridge, in Massachusetts. Among the periodical publications which announce their views are the Christian Examiner, the Scriptural Interpreter, and the Unitarian Advocate, printed in Boston; the Unitarian Monitor, at Dover, N. H.; the Christian Monitor, at Brooklyn, Conn.; and the Unitarian Essayist, at Meadville, Penn. The annual reports of the American Unitarian Association, the government of which is established in Boston, circulate information respecting the progress of the doctrine. Besides the Congregational Unitarians, the denomination called *Christians*, which is numerous, particularly in the Western States, reckoning, in 1827, from 700 to 1000 churches (letter of General Christian Conference, in Christian Examiner, vol. iv), maintains Unitarian opinions; and they are understood also to prevail in the large sect of the Reformed Baptists, in the same region of the country.—In France, many of the Protestant clergy reject the Trinitarian scheme of Christian doctrine. The tone of their principal publication, the *Revue Protestante*, is hostile to it; and the principal sources of supply for the ministry of the French churches, are the schools of Geneva and Montauban, where the Unitarian system has ascendency. A society was formed last year, at Paris, called the Unitarian Association of France.—In British Asia, a native society of Unitarian Christians has existed, for several years, at Madras, under the care of William Roberts, a native; but a much more remarkable developement of opinion of this kind occurred in the case of the distinguished Bramin, Rammohun Roy, of Calcutta, who, in his publications in English, called the Precepts of Jesus, and First, Second and Final Appeal to the Christian Public, has directed the thoughts of numbers of his countrymen to the subjects therein proposed, and, since 1827, has been associated with conspicuous individuals of the native and European population, in the support of Christian worship according to the Unitarian faith.—Unitarians profess to derive their views from Scripture, and to make it the ultimate arbiter in all religious questions, thus distinguishing themselves from the Rationalists (otherwise called the *Anti-supernaturalists*) of Germany. They undertake to show that, interpreted according to the settled laws of language, the uniform testimony of the sacred writings is, that the Holy Spirit has no personal existence distinct from the Father, and that the Son is a derived and dependent being, whether, as some believe, created in some remote period of time, or, as others, beginning to live when he appeared on earth. Three of the passages of the New Testament, which have been relied on to prove the contrary (1 John v, 7; 1 Tim. iii, 16; and Acts xx, 28), they hold, with other critics, to be spurious. Others (as John i, 1, &c.; Romans ix, 5) they maintain to have received an erroneous interpretation. They insist that ecclesiastical history enables them to trace to obsolete systems of heathen philosophy the introduction of the received doctrine into the church, in which, once received, it has been sustained on grounds independent of its merits; and they go so far as to aver that it is satisfactorily refuted by the biblical passages, when rightly understood, which are customarily adduced in its support. According as their distinguishing doctrine has been professed in different times and places, it has been found in connexion with various others, which have been prominent subjects of controversy in the church, as those which respect the manner of baptism, philosophical liberty and necessity, the methods of Christ's mediation, &c. The Unitarians (sometimes called *Socinians*) of Poland held to the obligation of invoking Christ—a view which no Unitarians of the present day, out of Transylvania, are believed to entertain. In America, Unitarian opinions are much divided upon the point of Christ's preëxistence; while, on the other hand, the rejection of the tenet of his vicarious suffering (or suffering as men's substitute), along with that of his supreme Deity, appears to be universally characteristic of the sect. (See Bock, *Historia Antitrinitariorum*; Lubieniecius, *Historia Reformationis Polonicæ*; Lampe, *Historia Ecclesiæ Hungaricæ*; Benkő, *Transylvania*; Maimbourg, *History of Arianism*; L'Amy, *History of Socinianism*; Rees, *Racovian Catechism*.)

Unitarians is also sometimes used, in politics, to designate a party in favor of a central government, in contradistinction to one in favor of a federal government. Thus we hear of the *Unitarians* in Buenos Ayres.

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